

# THE LITERARY GAZETTE;

AND

## Journal of the Belles Lettres, Arts, Sciences, &c.

No. 1180.

LONDON, SATURDAY, AUGUST 31, 1839.

PRICE 8d.  
Stamped Edition, 9d.

### THE BRITISH ASSOCIATION. NINTH MEETING: BIRMINGHAM.

IN our last two *Gazettes* we briefly announced the preparations made for the reception of the British Association at Birmingham, and the general arrangements for the business of the Sections. On our arrival we found that every possible facility was given for the usual routine; furnishing members with their tickets, electing new candidates, pointing out lodgings, and all the other conveniences which contribute so much to the ease of strangers, and to the promotion of the objects in the view of the Association. The same good order prevailed through the usual influx and bustle of Monday; so that we may truly say, experience has enabled the system to work well. Its complicated machinery has been happily reduced at Birmingham to something like steam-engine precision and regularity.

With regard to the political aspects of the town, which caused some apprehension a few weeks ago, there is nothing apparent to attract the attention of visitors. The houses burnt at the Bull-ring are, it is true, melancholy memorials of the past; and the remains of placards posted on the walls, offering rewards for the discovery of the guilty, or stating that the Riot Act has been read, are sad reminiscences of a deluded period. There is, moreover, a degree of gloom which has succeeded the painful excitement; and the general mind of the inhabitants seems to be more engrossed with questions of politics and local rule than can be conducive either to the interests of trade or to individual comfort and happiness. A debating corporation is, we fear, a poor substitute for a guild of merchants or a chamber of commerce. National politics are bad enough to engross a people; but local politics are a curse *par excellence*!

We shall inflict no further mention of them upon our readers; but simply observe, that on Sunday the entire population moving abroad, including the poorer classes, looked to us to be decently and respectably clothed, and well-fed. We saw no rags or other signs of squalid misery.

At three o'clock on Saturday the General Committee of the Association met, to the number of about sixty; Mr. Vernon Harcourt, the president, in the chair. The Marquess of Northampton, one of the vice-presidents, was also present; the Earl of Dartmouth was not; and of the other two, Mr. Corrie was lost to the meeting by death; and we were sorry to hear that indisposition prevented the attendance of Dr. Robinson, of Armagh.

The Report of the last meeting of the Committee at Newcastle was read by Professor Phillips, and agreed to.

Mr. Yates read a Report from the Council. It stated it to be thought inexpedient to add to the permanent property of the Association; now amounting to 5500*l.* 3 per cent. consols. It noticed the proceedings of a deputation sent to London to ascertain if any danger could be apprehended, or any circumstances connected with the late riots, which might render it advisable to postpone the meeting; and congratulated the members on the fact, that no

change was deemed necessary. It then adverted to the following matters to be brought before the Committee:—

I. The Requisition presented at Newcastle for the establishment of a distinct section for Agricultural Science.  
II. Mr. Kingsley's motion for the arrangement of the business of the Association.

III. The following Rules, which are recommended for adoption by the Council:—

1. That an admission-fee of 1*l.* be required from all future members admitted as annual subscribers, in addition to their annual subscription of 1*l.*; the composition of life-members to remain at 5*l.*

2. That every member, new and old alike, have the option of paying 3*l.* as a fixed *book-subscription*, entitling him to receive a copy of the volumes published after the date of such subscription.

3. That all recommendations of grants of money, requests for special researches, and reports on scientific subjects, be submitted to the Committee of Recommendations, and not taken into consideration by the General Committee, unless previously recommended by the Committee of Recommendations.

The Report was ordered to be received.

The Marquess of Northampton, after paying a compliment to his services to the Association, moved that Mr. Francis Baily be appointed a trustee in the room, we believe, of Mr. Bablage, resigned; which being seconded by Mr. Hutton, Mr. Baily was elected.

Professor Phillips then rose to propose the adoption of the three Rules recommended by the Council, as above. In support of the *first*, he urged that the extreme easiness of access led to the casual enrolment of so great a multitude, as to lead to serious embarrassment and confusion in every part of the arrangements. The increased provision to be made for the accommodation of ladies, a consequence of these numbers, was another source of much inconvenience. Again, it rendered the Association a more fluctuating body than it should be: so many persons attending once, and taking no further concern or interest in their proceedings. It was like paying a price to hear a few lectures or discourses; and he trusted, that by adopting this rule the meetings would become both more manageable and stronger.

Mr. Murchison seconded the motion, which was carried *nem. con.*

Professor Phillips then moved the *second* Rule, from which he anticipated that the publications of the Association would be supplied with less difficulty and more immediately to members; which last was very much to be desired, in consequence of the papers containing accounts of the state of science to the existing time being so useful to persons engaged in scientific pursuits.—Agreed to.

The Marquess of Northampton moved the *third* Rule, which would tend to the saving of much valuable time, and perhaps of some disagreeable discussions. To many propositions offered for their consideration there might be objections of so delicate a nature as to unfit them for being submitted to a public meeting. They might be like gunpowder thrown in, and at the risk of explosion. Should this rule pass, the worst that could happen was that two or three objects might not be taken up; and this bore no comparison to the advantages that must accrue from it. If any members objected to the Committee of Recommendations, it was competent to them to move the nomination of other individuals, but at all events the proceedings ought to emanate from that body.

[This Rule in reality makes the Committee of Recommendations the executive of the Association; and the more anomalous body, called the General Committee, little else than the registrars of their acts.—*Ed. L. G.*]

Dr. Yelloly seconded the motion, though the Society had gone on well during eight years without it; and he proposed, to add, as a rider, that one member of every Section should be allowed to attend the Committee of Recommendations, in order to explain the grounds on which the Section wished certain things to be done, and to vote on that subject.

This led to a long and uninteresting discussion, which ended in the original motion being carried and amendments negatived.

The whole debate arose out of a presumed disregard of a wish, of the Medical Section at Newcastle, to have the American gentleman with a hole in his side brought over for inspection, that we might learn how food was digested, and other functions, in the economy of nature, performed (See *Literary Gazette* on the subject; and, previously, with a full description of this individual and his remarkable condition).

*Proposed Section of Agriculture.*—The numerously signed requisition, for forming a Section on Agricultural Science, was read; but Dr. Yelloly, in the absence of Dr. Granville, withdrew the proposition, which he was not prepared to enforce.

Mr. Kingsley also, instead of proposing his resolutions respecting the arrangement of business, seeing that some of them had been already acted upon, agreed to lay them in the shape of suggestions before the Council.

Professor Phillips observed that they were always ready to adopt such hints as could be beneficial to the arrangements.

Lists of officers, &c., were then read, but as they were subsequently added to and altered, we shall omit them till Monday.

The meeting adjourned to Thursday at three o'clock.

At ten o'clock on Saturday night, 168 non-resident members were enrolled; and a very correct list, with their addresses, &c., circulated in the morning. Much credit is due to the local secretaries and their assistants, for their exertions in this and all the other business they have had in charge.\*

### MONDAY.

This morning, in due time, the Sections were constituted; and, after considering the alterations rendered necessary by the non-appearance of several officials, elected to various situations, the following list was given out of the presiding officers, &c., for the present Meeting:—

#### SECTION A.—Mathematics and Physics.

Steward.—Rev. J. Abbot. President.—Rev. Professor Whewell, F.R.S. Vice-Presidents.—Francis Baily, Esq. F.R.S., Professor Forbes, F.R.S., Major Sabine, Esq. Secretaries.—J. T. Chance, Esq., W. Snow Harris, Esq. F.R.S.—Professor Strevly.

\* The Committee of Recommendations, in whom, as we have observed, the executive power of the Association is lodged, was read by Mr. Murchison, as follows:—The Marquess of Northampton, Sir Charles Lemon, Bart., Dr. Buckland, Professors Daubeny, Forbes, Graham, Mr. J. E. Gray, F.R.S., Mr. G. E. Greenough, Mr. H. Hallam, Dr. Hodgkins, Mr. Hutton, M.P., Mr. G. R. Porter, Professors Lloyd and Lyell, Dr. Roget, Mr. Fox Talbot, Professors Willis, Whewell, and Wheatstone, and Dr. Yelloly, together with the President *pro tem.*, the Vice-Presidents, the General Treasurer, Secretaries, and other Officers.

## SECTION B.—Chemistry and Mineralogy.

Steward—Dr. Melson. President—Professor Graham, of London, F.R.S. Vice-Presidents—Professor Johnstone, F.R.S., Richard Phillips, Esq. F.R.S. Secretaries—Golding Bird, M.D. F.L.S., J. B. Melson, A.B. M.B.

## SECTION C.—Geology and Physical Geography.

Steward—John Francis, Esq. President—Rev. William Buckland, D.D. Vice-Presidents—For Geography, G. B. Greenough, Esq. F.R.S. For Geology, H. T. De la Bèche, Esq. F.R.S., Leonard Horner, Esq. F.R.S., Charles Lyell, Esq. F.R.S. Secretaries—G. Lloyd, M.D. F.G.S., H. E. Strickland, Esq. F.G.S., C. Darwin, Esq. F.R.S.

## SECTION D.—Zoology and Botany.

Steward—W. D. Crompton, Esq. President—Professor Owen, F.R.S. Vice-Presidents—J. E. Gray, Esq. F.R.S. P.R.S., Dr. Graham, F.R.S.E., G. B. Daubeny, M.D. F.R.S. Secretaries—E. Forbes, Esq. M.W.S., Robert Patterson, Esq., William Ick, Esq.

## SECTION E.—Medical Science.

Steward—Dr. Eccles. President—Dr. Vellody, F.R.S. Vice-Presidents—Dr. Johnstone, Dr. Roget, Sec. R.S., Dr. Macartney, F.R.S. Secretaries—Dr. G. O. Rees, F. Ryland, Esq.

## SECTION F.—Statistics.

Steward—Frederick Russell, Esq. President—Henry Hallam, Esq. F.R.S. Vice-Presidents—Sir Charles Lemon, Bart. M.P. F.R.S., G. R. Porter, Esq. F.R.S. Secretaries—Francis Clark, Esq., Rawson W. Rawson, Esq., W. C. Taylor, Esq. LL.D.

## SECTION G.—Mechanical Science.

Steward—William Hawker, Esq. President—Professor Willis, F.R.S. Vice-Presidents—Robert Stephenson, Esq., Dr. Lardner, F.R.S., G. Rennie, Esq. F.R.S. Secretaries—William Carmichael, Esq., W. Hawkes, Esq., T. Webster, Esq. Sec. Civ. Eng.

The business of the various Sections posted up by their committees for this day, afforded a fair promise of the matters which were likely to occupy the meeting.

## SECTION A.—Mathematics and Physics.

1. Sir J. Herschel, respecting the 'Reduction of Stars in Lacaille's *Cœlum Australe*.' [Professor Stevelly, the secretary, read this Report, for which 200*l.* was granted last year. It stated that considerable progress had been made, and only a small portion of the grant expended. The rest would be required in the course of next year.]

2. Sir J. Herschel's 'Report on the Revision of the Nomenclature of Stars.'

[A similar grant of 50*l.* to Sir John, Professor Whewell, and Mr. F. Bailey: in which also some progress had been made in the northern hemisphere. The laying down of the stars in the southern hemisphere on a planisphere had been commenced. No expense had been incurred, and application was made for a continuation of the grant.]

3. Mr. Bailey's 'Report on the Reduction of the Stars in the *Histoire Céleste*.'

[Here also, in making progress, 35,000 stars had been reduced, and 150*l.* of the grant expended. The whole was expected to be concluded next year.]

4. Mr. Bailey's 'Report on the Extension of the Royal Astronomical Society's Catalogue of Stars.'

[Partly completed; 150*l.* expended; and the completion expected next year.]

5. Professor Lloyd, 'On Placing Three Magnets in an Observatory.'

Professor Lloyd observed, that the phenomena of terrestrial magnetism could not be determined by one magnet. His researches had, therefore, been directed to ascertain the best position of three magnets, so as in the least degree to affect each other, and ascertain this problem. The learned Professor then went into a demonstration of the fundamental theorem included in this proposition, and gave a formula, which he illustrated by diagrams on the board beside him; and of which we give the substance. One magnet should be placed in the line of the magnetic meridian, and is termed the declination magnet; the second, perpendicular to it, representing the horizontal force; and the third, representing the vertical force, at the angle opposite the base of the other two. The limits of distance can, at present, be determined by experiment only. By the positions of these three magnets, we have four indeterminate arbitrary angles, by which we are enabled to fulfil four equations of conditions; and thus the relative action is rendered nothing, and

the mutual action of the three magnets destroyed. A gallery of about forty feet in length is most practically convenient for the placing of the three magnets. The result arrived at by Professor Lloyd is exceedingly interesting, in relation to the observatories about to be erected in the British colonies, and to the solution of the difficult problem of terrestrial magnetism.

6. Sir D. Brewster's 'Report of Hourly Meteorological Observations at two Stations in Scotland.'

[This Report recorded the daily variations of the temperature; and mentioned an extraordinary aurora borealis, 27th Nov. 1838; at which time there was a remarkable depression of the barometer, which stood at 27.2, seven hundred feet above the level of the sea. A conversation upon the aurora, and this general depression of the barometer, ensued, but led to no conclusion. Mr. Whewell noticed a curious Japanese picture, which he thought represented this phenomenon at a remote period. These were radiations from the centre of a circle. He also stated, that the subject connected with the aurora borealis had excited much interest at Utrecht.]

7. Letter from Professor Bache of Philadelphia, respecting his 'Meteorological Report.'

The Professor was not ready with his report, owing to a tangle in the state—indisposition, and being occupied with preparing his "Tour in England;" but he hoped to send it next year. The latter portion of his letter referred to rain-gauges, magnetic arrangements, &c. This led to a long gossip about rain-gauges, such as we reported from Newcastle; and the general impression (sanctioned by Professor Foster) was, that the best position for a rain-gauge was a square hole cut in a horizontal surface of the earth.

8. Dr. Daubeny, 'On a Sub-registry Photometer.'

The rough model of this instrument was exhibited. It depended upon a simple principle, which he hoped would be explained by Mr. Fox Talbot, and that it might form an appendage to that gentleman's paper. The model was of glass and wood, enclosing ammonio-sulphate of copper, through which the solar rays passed, acting upon photogenic paper, whereby their intensity was measured all day, and each hour. The paper travelling on rollers, caused each portion to be acted upon, as exposed, and become more or less discoloured. The effect was reduced to a scale, and marked off by a common mechanical process.

Professor Forbes observed, that considerable mechanical difficulties presented themselves; and otherways objected to a dependence upon such an instrument.

9. Mr. Fox Talbot's 'Remarks in reference to M. Daguerre's Photogenic Process.'

Mr. Talbot offered a few extempore remarks on M. Daguerre's photogenic process. M. Arago had declared, that optics and chemistry united were insufficient, in their present state, to give even any plausible explanation of this complicated process. If M. Arago, who had the advantage of being for six months acquainted with the secret, was of this opinion, it seemed as if a call were made on all the cultivators of science to use their united endeavours, by accumulating new facts, to penetrate into the real nature of these mysterious phenomena. For this reason, Mr. Talbot said, he would offer to the Section a small contribution, on his part, of new observations, which might, perhaps, be of service towards the elucidation of this new branch of science.

The first part of M. Daguerre's process consists in exposing a silver plate to the vapour of iodine, by which it becomes covered with a stratum of iodine of silver, which is sensitive to light. Mr. Talbot stated, that this fact had been known to him for some time, and that it

formed the basis of a curious optical phenomenon; which, as it did not appear to have been observed by M. Daguerre, he would describe to the meeting.

Place a small particle of iodine, the size of a pin's head, on a plate of silver, or on a piece of silver leaf, spread on glass: warm it very gently, and you will shortly see the particle become surrounded with a number of coloured rings, whose tints resemble those of Newton's rings. Now, if these coloured rings are brought into the light, a singular phenomenon takes place. For the rings prove to be sensitive to the light, and their colours change; and, after the lapse of a short time, their original appearance is quite gone, and a new set of colours have arisen to occupy their place. These new colours are altogether unusual ones; they do not resemble any thing in Newton's scale, but seem to conform to a system of their own. For instance, the two first colours are deep olive green, and deep blue, inclining to black, which is quite unlike the commencement of Newton's scale. It will be understood, that the outermost ring is here accounted the first, being due to the thinnest stratum of iodide silver, furthest from the central particle. The number of rings visible is sometimes considerable. In the centre of all the silver leaf becomes white and semi-transparent, like ivory. This white spot, when heated, turns yellow; again recovering its whiteness when cold: whence it is inferred to consist of iodide silver, in a perfect state. The coloured rings seem to consist of iodide silver, in various stages of development. They have a further singular property, which, however, has not been yet sufficiently examined into. It is as follows: it is well known that gold leaf is transparent, and transmits a bluish-green light; but no other metal has been described as possessing coloured transparency.

These rings of iodide silver, however, possess it, being slightly transparent, and transmitting light of different colours. In order to see this, a small portion of the film should be isolated, which is best done by viewing it through a microscope. Mr. T. said, that he had considered the possibility of applying a silver plate, thus combined with iodine, to the purpose of photogenic drawing; but he had laid it aside as insufficient for that purpose, on account of its sensitiveness appearing to be much inferior to that of paper spread with chloride of silver; and therefore in an equal time it takes a much feebler impression. Now, however, M. Daguerre has disclosed the remarkable fact, that this feeble impression can be increased, brought out, and strengthened at a subsequent time, by exposing the plate to the vapour of mercury.

The next point of M. Daguerre's process is this exposure to vapour. And this is by far the most enigmatical part of the whole process. For he states, that if you wish to view the picture in the usual manner, that is, vertically: you must hold the plate inclined to the vapour at an angle of 45° (and vice versa). Now, this is something extraordinary; for whoever heard of masses of vapour possessing determinate sides, so as to be capable of being presented to an object at a given angle?

From the hasty consideration which he had been able as yet to give to it, his first impression was, that this fact bore a certain analogy to some others which he would mention.

If a piece of silver leaf is exposed to the vapour of iodine, however uniform the tension of the vapour may be, yet it does not combine uniformly with the metal, but the combination commences at the edge of the leaf, and spreads inwards, as is manifested by the formation of

successive coloured bands parallel to the edge. This is not peculiar to silver and iodine, but occurs when other metals are exposed to other vapours, not always with much regularity, but displaying a tendency to combine in this way. A possible explanation is, that this is due to the powerful electrical effect which the sharp edges and points of bodies are known to possess: in fact, that electricity is either the cause or the attending consequence of the combination of vapour with a metallic body. Again, if a minute particle of iodine is laid on a steel plate, it liquefies, forming an iodide of iron, and a dew spreads around the central point. Now, if this dew is examined in a good microscope, its globules are seen not to be arranged casually, but in straight lines along the edges of the minute striæ, or scratches, which the microscope detects even on polished surfaces. This is another proof how vapour is attracted by sharp edges, for the sides of these striæ are such. Whether or not these facts had any relation to that observed by M. Daguerre, of the action of vapour at an angle of 45°, Mr. Talbot did not pretend to say, but thought them worthy of being mentioned to the Section.

It had been repeatedly stated in the "Comptes Rendus" of the French Institute, that M. Daguerre's substance was greatly superior in sensitiveness to the English photogenic drawing-papers. Now, however, it appeared that this was to be understood in a certain peculiar sense, inasmuch as the first or direct effect of the French method was very little apparent, and was increased by a subsequent process. This rendered it difficult to institute a direct experimental comparison between them. If it could be accomplished, he doubted whether M. Daguerre's substance would be found much more sensitive than his. The present degree of sensitiveness of the photogenic drawing-paper was stated to be as follows:—It will take an impression from a common Argand lamp in one minute, which is visible though weak; in ten minutes' time, the impression is a pretty strong one; in full daylight, the effect is nearly instantaneous.

Mr. T. then mentioned a kind of photogenic pictures which afford a very capricious phenomenon. The objects are represented of a reddish colour on a white ground, and the process leaves the pictures in such a state that they can neither be said to be *fixed*, nor the contrary, but are in an intermediate state: that is to say, that when they are exposed to sunshine they neither remain unchanged (as *fixed* pictures would do), nor are they destroyed (as *unfixed* pictures would be). But this singularity occurs, that the white ground remains unaltered, while the colour of the object delineated on it changes from reddish to black with great rapidity, after which no further change occurs. These facts may serve to illustrate the fertility of the subject, and shew the great extent of yet unoccupied ground in this new branch of science.

#### SECTION B.—Chemistry and Mineralogy.

The Papers announced in this Section were:—

1. Professor Hare, 'On the Preparation of Metallic Bases of Earth.'
2. Dr. Mackay, 'On a Bark from South America.'
3. Mr. Mallet, 'Observations on the Action of Sea Water on Iron.'
4. Mr. Harris, 'On some Phenomena of Colour in Glass.'
5. Coathorpe, 'On the Mode of Graduating Glass Tubes.'

[Two other papers postponed.]

#### SECTION C.—Geology and Physical Geography.

Dr. Buckland in the Chair.

1. Dr. Buckland's 'Report on Agassiz's Work on Fossil Ichthyology.'

2. Mr. Lyell, 'On Tabular Cavities in Chalk, near Norwich.'

3. Mr. J. D. Marshall, 'On Section of Silurian Rocks in Westmorland.'

4. Dr. Buckland, 'A Communication from Mr. Oram, on the Applicability of Small Coal to Steam Navigation.'

The Geological Section has been attended with its former popularity at this meeting; and its discussions have been of a very interesting character.

Before proceeding to the business on the list, the chairman called the attention of the meeting to a communication from a public association of the town of Bradford, recommending that local museums should be formed for the collection and preservation of such specimens as occurred in their own neighbourhoods. This he observed was a commonsense view of the matter, and could not emanate from a fitter place than from Bradford; which, like Birmingham, was seated on those enormous remains of ancient vegetation which had raised them from the rank of petty villages to the high commercial and manufacturing importance which they now enjoyed. The same course had been already pursued at Newcastle, and the members who had visited that town last year, had seen how valuable the results had been. Strangers visiting such museums would at once see what the country contained, and learn, without further trouble, what to seek and where. It was properly recommended to keep distant products separate and apart from those of the localities where the museums were established, and he (the chairman) was of opinion that too much attention could not be paid to this excellent suggestion.

Mr. Greenough, before proceeding to the business of the Section, took the opportunity to express his gratitude to the French government for having, ten years ago, formed a national collection of this kind, arranged in departments. Nothing could be more desirable than to form topographical museums; and he regretted that the example of France had not been followed in the British Museum. He trusted that this reproach would soon be removed, and in the meantime that local collections would be encouraged. Whilst on the topic he would merely observe, that heretofore fossil remains had been too little considered in reference to their localities. In looking for them according to the strata in which they were discovered, the varieties found in different parts had been rather overlooked.

Mr. Murchison was warmly thanked for his liberality in allowing a portion of his great map to be copied, for the use of the excursion appointed for Friday.\* It will certainly

\* It has been arranged as follows, and much gratification is anticipated from it:—

#### Division A.—Iron Works, &c.

Leaves Birmingham at half-past seven, A.M., and disembarks at Tipton Green, for the Horseley Iron Works, Tipton; from thence to the Works of Messrs. Bradley Barrows, and Hall; and after that, if time will permit, to the Castle Hill and Lime Caverns.

#### Division B.—Rowley Hills and Trap Rocks.

Leaves Birmingham at eight A.M.; disembarks at the Brades Canal Branch, and proceeds to the Trap Formations at Rowley Hills, Pearl Hill, Bare Hill, and Tansley Hill; and from thence to the Limestone Formations at the Castle Hill, if time permit.

#### Division C.—Caverns and Lime Formations.

Leaves Birmingham at half-past eight A.M., and disembarks at Tipton Bridge; then proceeds by Mr. Bradley's Lodge to the Lime Caverns; and from thence to the Wren's Nest.

The above divisions will leave punctually at the time fixed, by boats, from Messrs. Shipton's wharf, in Broad

help much to the enjoyment of the remarkable Limestone Caverns.\*

The Marquess of Northampton, as an *ex officio* trustee of the British Museum, whilst he highly commended the plan of local and national museums, stated that there was as yet no room for the former in the museum. For the present they could only have a general collection. He trusted, however, that this difficulty would be removed, and one of the greatest interest and variety be attached to the metropolis.†

Dr. Buckland now came to the first paper of the Section, and expressed his regret that M. Agassiz was not able to attend the meeting to express the gratitude he felt for the patronage he had received in the prosecution of his splendid work, not only in grants from the Association, but from the subscriptions of individual members, in consequence of which he had been enabled to carry it on. The learned Chairman spoke highly in praise of this work (on Fossil Fishes), the price of which was 25*l.*; and which must have stopped but for the assistance given to its author by the Association; and well did he merit that assistance. He had relinquished pursuits from which he might now have been in the receipt of a considerable income, and all for the sake of science. He had known him, when engaged in this arduous career, with the revenue of only 100*l.*; and of this he paid 50*l.* to the artist for drawings, 30*l.* for books, and lived himself on the remaining 20*l.* a-year! Thus had he raised himself to an elevated European rank, and in his abode, *au troisième*, was the companion and friend of princes, ambassadors, and men of the highest rank and talent of every country.

There were now published Parts 10 and 11; and in three or four more M. Agassiz's magnificent production would be complete. (Professor Buckland held up some of the plates, which were beautifully executed.) These they owed to the talent of M. Agassiz, and to the encouragement he had received from the British Association. His system could not be too highly estimated. It was founded, not on internal structure, which was so perishable, but on those external appearances which, from their nature, were calculated to endure from ages so remote, and be submitted to geological inspection and investigation. Men and women born naked, and so soon accustomed to think more of clothing than of their own natural covering, were not apt to pay so much attention to this important subject as it deserved. But to eels, for example, it was of vital interest. Had any one of his auditory ever seen scales of an eel?

[No answer for a time—when Dr. Lloyd, of Leamington, one of the Secretaries, said, "I have."]

Then, continued the speaker, there is one gentleman present who has seen the scales on an eel. It is a fortunate circumstance, for he will bear witness to the fine provision in its external economy, covered with minute scales,

Street. Those Members who are too late for the boats to which they belong, cannot be conveyed by any others. Non-resident Members are requested to make immediate application at the Inquiry Room for tickets, as the lists will be closed on Tuesday, the 27th inst., at four o'clock P.M. Resident Members are requested to enter their names immediately, as the remaining seats in the boats will be allotted to them in the order of application. None but Members of the Association will be permitted to apply for excursion tickets, the price of which is 2*s.* 6*d.* including a ticket for a cold dinner at Dudley.

\* The local publisher has, however, put on a screw, in charging 2*s.* for what ought not to have cost above 6*d.*

† In the meantime, might we suggest the expediency of public encouragement being given to Newcastle, Bradford, and other provincial establishments; on the condition of preserving duplicate specimens for the National Museum? The interchange of local duplicates, one place with another, ought to be arranged on a liberal footing. It would enrich all, and impoverish none.—*Ed. L. G.*



and having diffused over them a quantity of slimy mucus, under which, being concealed, they were admirably adapted for that mode of life which consisted of imbedding themselves in mud, or penetrating under stones and rock. But this was a slippery subject, and he would leave the eels with their pilot coats on to proceed with the rest of the Report. One very curious result remained to be noticed. There were but four great dispositions of scales in all the species of fish now living; and of these, two belonged to classes whose formation was traced to the later geological strata. Below, in the oolite, sandstone, slate limestone formations, their character was totally distinct from the more recent, in chalk and the superincumbent strata. In the former, their scales of enamel, or enamel upon bone, were so imperishable, that they had resisted destruction, whilst the bones, and all other parts, except the teeth, had decayed in the lapse of centuries of time. He regretted to say that, in regard to the teeth, a sudden indisposition had deprived the Section of the presence of Mr. Owen, whose researches had made him so perfect an authority on every thing connected with these organs. Their microscopic forms had been so minutely examined and ascertained by that gentleman, that he could almost at a glance decide to what animal, existent, or no longer existent, they belonged; and he trusted that by Saturday Mr. Owen would be sufficiently recovered to be able to communicate to them some of his vast fund of information on the subject. The Professor then playfully alluded to the ornaments which could be manufactured from these remains, and recommended them to the ladies; but returning to M. Agassiz's system, he observed, that it furnished a new key to the early conditions of the earth, and shewed the course in which the Creator had created new animals as that earth became fitted for their reception. It unfolded the progress of organisation of vertebrated beings; in which the traces of fishes were of so much value. This we owed to M. Agassiz, who being able to detect and pursue these traces at a period anterior to the *Mammalia* of Cuvier, went deeper below the surface of the globe and its later inhabitants, and laid before us the secrets of ages long before these had existence.

The learned Professor concluded by recommending M. Agassiz's work, not only for its own importance, but as only a limited number had been printed, on account of its rarity.

A Member stated that he had made a collection of fossil fish in the neighbourhood of Manchester, which he would communicate at a future day.

Dr. Buckland mentioned, that after to-day the gallery round the Section-room would be appropriated to ladies, and that if he saw any below he would call upon them for speeches.

[This threat, however, he did not execute on after-days, when a few privileged ladies were introduced into the body of the room.]

2. The second paper was by Mr. Lyell, 'On the Pipes or Tubes of Gravel found in Chalk;' and it was of such interest as to afford the principal topic of discussion and observation on this and the ensuing day.

Mr. Lyell directed their attention to this condition of these strata, as exemplified at a locality about two miles west of Norwich. Here, as shewn by a diagram, pinned up in the Section-room, a bed of gravel lay over the deep chalk formation, and penetrated it in nearly perpendicular pipes or tubes, of various lengths and widths. They tapered like carrots. Some were three or four feet in diameter, and pene-

trated five, eight, or ten feet; others were from twelve, to above twenty feet wide at the upper part, and descended to their points, forty, sixty, or more feet. These pipes were filled with gravel, sand, or clay, the same as the horizontal strata above. They contained no fossil remains that he had discovered; and he referred their age to that of the Norwich Crag. One remarkable fact was, that the sides of these pipes were lined almost continuously with a fine clay, nothing similar to the materials, the gravels and pebbles, which filled up their centres, and appeared evidently to have been precipitated from above, slowly and gradually after (probably at a much later period) the openings in the chalk had been made to receive them. The horizontal nodules of flint, which crossed the chalk, were found in the wider pipes to have fallen through them, and below the line which they occupied in the chalk. They never arrived at the bottom; and this was another proof of the gradual descent of the gravel, &c., which had so far filled and arched the pipes, that heavier bodies were thus intercepted as they were disengaged from the chalk. The chalk on the edges of the pipes was in a most decomposed state, and slightly discoloured, of a yellowish hue, as if from clay and sand, and extending to the distance of from one to five feet.\* His explanation of these appearances was, that the cavities in the chalk were first formed by chemical action; and at, perhaps, a long subsequent period, gradually filled up as they now appeared. The first operation might either have been effected by water from above, charged with carbonic acid, or by the action of carbonic acid passing upwards, either with springs or in vapour. He considered that the clay lining was the last portion of the formation; and stated that it contained no calcareous matter whatever. A thicker layer of it was found at the bottom of the pipes. He confessed that there were difficulties opposed to his theory, which seemed to rely most on the ascent of carbonic acid in springs; but he had brought the subject fairly under the observation of the Section.

Mr. De la Bèche observed, that there were similar irregularities on the upper surface of green sandstone, but they did not penetrate to any depth. He agreed with Mr. Lyell that these tubes had their origin in chemical action; and attributed them to the descent of rain-water, charged with carbonic acid. Every well in the upper gravel would receive a supply of this from every shower, which, sinking through it, would form carbonate of lime, and readily account for the descent of the pipes to points of various extent. He also agreed that the formation of the cavities, and their filling up, must have belonged to different periods. The argillaceous lining he could not explain.

Professor Phillips remarked on the importance of this communication, and the examination of similar phenomena, not only in lime formation, but in oolitic rocks. He thought it possible that the fissures might have been begun by mechanical action, and completed by chemistry.

The Chairman said this subject had occupied his attention ten years ago, but had, like many others, been indefinitely postponed, as he was occupied with different pursuits. He would, however, bring certain drawings with him to-morrow, and propound his theory on these appearances. Every chalk formation exhibited

\* This part of the appearance, and that of the fine clay lining, was afterwards much discussed. Might it not arise from an infiltration of the materials in the pipes, through the adjacent chalk? The finer particles would pass through and discolour it, whilst those a little more gross would form the lining.—*Ed. L. G.*

the same pipes or tubes. Some of them were enormous. Between High Wycombe and Oxford, and all along the sea-shore of England, and in Normandy, they might be studied. At Shottouer (as we understood him), they occurred in the oolite; also in the Kimmeridge clay over Chert and Caen.

Mr. Yates described the organ pipes at Maestricht; similar fissures shewn to travellers there, and so called from their resemblance to the musical instrument. These did not terminate in points at their lower extremities, and many of them were empty. His opinion inclined to their having been produced by action from below.

Mr. Lyell terminated the discussion by expressing his satisfaction at the general concurrence of opinion in the Section, and which was opposed to that of M. Passy on these phenomena in Normandy. He was convinced that the fine clay lining was not at all derived from the chalk. He would then ask where the chalk removed from the cavities had gone, if precipitated from above? If they held that the action proceeded from below, this difficulty would vanish.

#### SECTION D.—Zoology and Botany.

1. Mr. Lankester, 'On the Formation of Woody Tissue.'

2. Mr. Forbes and Mr. Goodsir, 'Notices of Zoological Researches in Orkney and Shetland.'

3. Dr. Wilde, 'On the Preparation of Fish, and Models and Drawings of a Mummy brought from Peru.'

4. Mr. Lankester, 'On the Preparation of Fish.'

1. Mr. Edwin Lankester, of Campsall, near Leeds, read the first paper in the list, 'On the Formation of Woody Tissue.' He began by enumerating the principal tissues, and tracing the origin of the whole to the simple cell. He thought this fact was lost sight of in the theories of the formation of wood. The development of this tissue had been ascribed to the leaves by Du Petit Thouars, and to the bark and wood by other observers. The former view was supported by Dr. Lindley. The author objected to the theory of the formation of wood from buds or leaves. I. Because hardened, elongated tissue, is found in Cryptogamia; in leafless Endogæus; in the pericarps peduncles, &c. of Phanerogamous plants, where there are no leaves; in leafless Exogæus, as *Monotropa* and *Cactæes*; and in the knobs of beech-trees, which Du Trochet calls *Embryo-buds*. The author entered into a lengthened account of these bodies, and thought the following conclusions were all that could be asserted in the present state of our knowledge:—1. That the requisites for the formation of wood are a living tissue, developing elongated fibres; 2. A tissue, forming and depositing secreted matter; 3. exposure to the influence of external stimuli. II. That the secreted matters are more easily brought under the influence of external stimuli in the youngest tissues, hence the importance of leaves. III. That neither bark nor leaves are essential to the formation of woody fibre. The paper was accompanied by a number of specimens.

Mr. Babington thought Mr. Lankester's conclusions correct, and could confirm the accuracy of his remarks on the embryo buds. The fact of a stock forming its own wood, whilst a graft formed its own, he thought tended to refute Du Petit Thouars's theory.

Dr. Boosey had heard the paper with interest, as he had long been of opinion that facts were opposed to Du Petit Thouars's theory. He

would mention the oriental plane, which shed its bark from increase of wood; this it did in the centre of the tree, and not at the top, as it would do, if this theory were true.

2. Mr. Forbes then read his paper 'On some new Animals he had discovered off the Coast of Shetland.' He enumerated and described thirty new species of invertebrated animals, which he had discovered. Amongst others, a very interesting polypus, standing between the genera *Coryne* and *Tubularia*, and which he proposed to call *Ellisia*.

Mr. Gray objected to the name *Ellisia*, as it had been already applied by Dr. Brown to a plant.

3. Dr. Wilde made some observations 'On the Mummy brought from Peru.' It was peculiar in being doubled up, and having a blue net thrown over its body.

Dr. Macartney, of Dublin, referred to its anatomical peculiarities. The intestines were emptied of their contents, and other parts of the preparation were of a singular nature.

4. Mr. Lankester then read the paper 'On the Preparation of Fish.' His mode demanded attention, on account of the ease with which it might be done. The side and interior of the fish were removed, and the skin allowed to dry in a proper shape by pieces of cork being placed inside, and then on being placed on paper they assumed their original form. (The specimens exhibited were most natural and beautiful.)

This paper led to a long and interesting discussion on the various modes of preparing animals for museums, in which Dr. Macartney, Mr. Wilde, Mr. Gray, and other naturalists, took part.

#### SECTION E.—Medical Sciences.

1. Cases, by Sir D. Dickson, 'On the Rupture of the Duodenum,' &c.

2. Mr. Middlemore, 'On the Treatment of Capsular Cataracts.'

[These papers do not admit of popular illustration in a Journal like ours; and we shall probably take a view of this Section altogether at the end of the week, with the exception of any papers of a nature to interest the general reader.]

#### SECTION F.—Statistics.

1. 'Contributions to the Educational Statistics of Birmingham.'

2. Mr. G. Porter, 'On the Collection of Agricultural Statistics.'

3. The Manchester Statistical Society's 'Report on the Condition of the Working Classes of Rutlandshire.'

[Abstracts of these Reports will be given hereafter.]

#### SECTION G.—Mechanical Science.

1. Mr. Hawkins, 'On Paving Roads and Streets with Blocks of Wood placed End upwards.'

2. Mr. Taylor's Report 'On the Duty of Cornish Engines.' (A money grant of 50*l*.)

3. Mr. Russell's 'Observations on the most Economical Proportion of Power to Tonnage in Steam-vessels.'

4. Dr. Lardner's 'Contrivance for detecting Incuracies in Lines of Railroad.'

1. Mr. Hawkins, 'On Paving Roads and Streets with Blocks of Wood placed End upwards.'—The public attention being turned to the subject of paving roads and streets with blocks of wood, placed with the grain in a vertical position, the plan being highly spoken of for goodness and durability by many travellers, who have seen such roads abroad, and although seven patents have been taken out in England for wooden pavements in little more than a year past—there still being, I apprehend, no specimen in this country calculated to afford the means of forming a sound public opinion on this most valuable means of road-making—it is

desirable that those who have had opportunities of examining such pavements should contribute the results of their observations and inquiries, towards informing the public mind, and to guard it from being led to an unfavourable conclusion by two specimens very imperfectly laid down in London—one in Oxford Street, and the other in the Old Bailey. Having myself attentively watched for about four years, from 1827 to 1831, the effect of much travelling over a piece of wooden pavement, well executed, in the principal thoroughfare of Vienna, and observed that it appeared to wear away less than any other kind of paving material whatever, I frequently, after my return to England, in 1831, mentioned to our engineers the superiority of such roadways for carriages, and recommended their universal adoption; having also made inquiries of several persons, who have observed the condition of a piece of wooden pavement, laid about three years ago, in that very great thoroughfare, the Broadway, in New York, and been repeatedly informed that the execution of that piece was performed in a workmanlike manner—the particulars of which have been stated to me—I am strengthened in my high estimate of the value of great attention to the goodness of the workmanship. One gentleman of acute observation informed me, that he saw a stone of near twenty tons weight drawn on a carriage over this piece of pavement, without appearing to make the least impression on it. Under these circumstances, I come forward as a disinterested advocate of this system of paving, in the full persuasion that sound wood, with the grain vertical, is the best material yet discovered for making good and durable roadways; and that roads formed of that material, well executed, may be made so even as to constitute a sort of universal railway, on which carriages may be drawn by a small proportion of horse-power, and on which steam carriages may be run as safely and almost as fast as on railways. Thus, finding myself in possession of valuable information and experience on this most economical kind of pavement, and having no connexion with any parties for carrying it into effect, I deem the Mechanical Section of the British Association the medium by which the public mind can be the most extensively informed; and therefore feel it my duty, in a concise manner, to state the points on which the goodness and durability of such roads will mainly depend. They are:—1. That the wood be chosen from the heart of sound trees, not a particle of sap being in any case allowed to be laid down, lest early rottenness be the result. The resinous fir offer excellent materials at moderate prices, where little hand-carriage is required; but such durable woods may be employed as can be the easiest procured in the respective localities of the roads to be paved. 2. That the blocks, which are to be laid contiguously, be cut to an exact gauge, so as to fit closely and evenly together; and when placed side by side on a level floor, no block shall be visibly higher than another. 3. That the depth of the blocks be at least once and a half of the breadth, a firm lateral support being found necessary to stability; twice the depth of the breadth is to be preferred. Each block, when rectangular, is supported by four others; and when formed into hexagonal prisms, which appears to be the favourite form, each block is supported by the six surrounding ones; and this support will be the more effective in proportion to the accurate and tight fitting of the whole mass of blocks. The hexagonal prism being found to afford the

greatest quantity of wood from a tree, when

the diameter of the prism is as large as can be cut out of the whole diameter of the sound part of the tree, that figure has been adopted in all cases which I have seen or heard of, as hitherto carried into effect; I shall therefore omit considering various other figures proposed, until specimens of them have been laid down and fairly tested by experience. 4. That the blocks be laid upon a bed firmly made with gravel, shingle, hard rubbish, or other hard material, well rammed down, and made even previously to laying the blocks. An excellent bed in New York was made of marble chippings, from a neighbouring statuary's yard. 5. That a thin layer, of only half an inch of fine gravel, be spread evenly over the rammed and levelled surface of the bed, at the time of laying the blocks, to favour their adjustment. 6. That the blocks be laid so as to present an even upper surface before any ramming of them is commenced, in order that the ultimate making them even shall not depend so much on the rammer as on the evenness of the bed; the use of the rammer being to settle the whole firmly down, no block should have to be rammed much more than the rest. If one block be allowed to remain higher or lower than the contiguous ones, a jolting of the carriages will take place; and the tendency of this jolting is, to depress the lower blocks more than the higher ones; and thus the evil, when commenced in the smallest degree, is found to be gradually growing worse; for the carriage wheel, when descending from the higher block upon the lower one acts as a rammer; but when ascending from the lower to the higher, it acts only as so much dead weight. In addition to the above essential points, it may be observed, that the blocks should be cut from dry wood, and used soon after being cut, lest their figure vary by warping; they may be roughly cut abroad, while the tree is green, and re-cut after they have become dry. The blocks may perhaps be cut by steam power in England, at as little expense as by hand in foreign countries, where from the lowness of wages it might be supposed England could not compete with them. Many more important points might be stated; but the valuable time of the Section must not be occupied with minutiae."

In a subsequent conversation, it was suggested that the blocks might be prepared by injecting the pores of the wood with a resinous composition. Notwithstanding the very careless manner in which the wooden pavement in Oxford Street was laid down, it was asserted that it had stood the best of all the ten experimental pavements. So little care had been bestowed, that no attention was paid to securing a dry bed, and some of the blocks were actually three inches deep in water. The contract for this portion was taken at 9*s*. 6*d*. per square yard.

2. Mr. J. Taylor announced, that the grant of money awarded by the Committee of the Association for a reduction of the duties of Cornish engines had been given to parties whose work was in the Inquiry Room. These reductions were of much interest, and would serve well as a foundation on which to found further remarks.

4. Dr. Lardner described an instrument which he had constructed for ascertaining the deviations of lines of rails. He employed a truck with wheels, without phalanges, and perfectly cylindrical, and on which a platform was placed. An iron tube crossed this, terminating at each end at right angles, into which was introduced mercury; so that it was, in fact, a mercurial level. On placing this along the

lines of railway, the mercury in the columns was found to go up and down; and into each was introduced a float and a piston, to the top of the rod of which a pencil was attached, which, on the occurrence of any incorrectness of the line, described a curve on a sheet of paper, the ordinate of which gave the variation of the rail. He had tried it on several parts of a line where the variation was perceptible. The instrument was checked so as to shew that this curve was doubtlessly the real representation of the line; and being simple and easily applied, it would no doubt be found useful to contractors on new lines of rails.

#### EVENING MEETING.

Soon after eight o'clock, the Reverend President took the chair in the noble Town Hall, the platform, galleries, and body of which, were more than two-thirds filled by members, both resident and non-resident, and by a number of ladies.

Mr. Murchison having announced that the President of the year would address them, as is usual on this occasion, Mr. Vernon Harcourt read his address, which occupied above an hour and a half in the delivery, but of which we shall offer no summary, as we presume it will be published entire, and afford us a better opportunity of giving it, or its substance, than could be done from hearing it imperfectly.

The following is a correct abstract of Mr. Murchison's communication to the Section C. on Thursday; and in a geological point of view the most important paper of the meeting, as it unites opinions upon a great principle and much controverted theory. It is entitled, 'On the Carboniferous and Devonian Systems of Westphalia and North-western Germany.' The author states that having, in company with Professor Sedgwick, examined the older rock of north-western Germany and Belgium, it is the intention of his friend and himself to lay before the Geological Society of London a general memoir (illustrated by numerous fossils) on the classification of these ancient deposits, shewing a succession of the carboniferous, Devonian, or *old red* and *Silurian* systems. The present communication bears only upon one point of this analysis, and is offered as a clear and indisputable proof of the geological position of the anthracitic or culm-bearing strata of Devonshire and Cornwall. Transverse sections, in descending order from the productive coal-field of Westphalia on the N.N.E. to the uppermost division of Protogic rocks on the S.S.W., were explained; and one from Dortmund by Schelke, to the neighbourhood of Limburg and Iserlohn, was specially adduced, in which the various masses of strata are clearly exposed in five natural sections, in the following descending order:—

1. Coal shales, coal, &c. (productive coal-field).
2. Millstone grit series, with many impressions of large plants, and occasional thin seams of coal.
3. Thinly laminated carbonaceous sandstones and shales, containing many grasses and small plants, together with bands of flat-bedded, black, bituminous limestone and shale, charged with *Possidonites* and *Goniatites*, and attenuating with courses of flinty schist, the *Kiesel-schiefer* of German geologists.
4. Carboniferous or mountain limestone, of great thickness, and of the usual British mineral characters, loaded with many well-known fossils of the formation.
5. Upper Devonian rocks, consisting of black schists, gray and red sandstones, with occasional calcareous courses, and numerous fossils (the *old Grauwacke* of German authors).

The order and sequence of these strata is indicated and maintained along the lower edge of the whole range of the large coal-field of Westphalia, the beds successively rising to the

surface at angles, varying from 30° to 40°, in perfect conformity, and shewing throughout the clearest and most complete transition into each other. It is particularly to the group No. 3, indicated on an exhibited drawing, that the author directs the attention of British geologists; because it is, in all respects, identical with the culm-bearing strata of Devon and Cornwall, first described by Professor Sedgwick and himself, as being a portion of the true Coal-Field, and not belonging to the *Grauwacke* or older transition rocks, to which they had formerly been referred.\*

The Westphalian sections establish the geological position of the Bidefold culm strata more clearly than has been done by any stratigraphical evidence in Great Britain, by presenting five masses of unequivocal mountain limestone, rising out from beneath the black limestone and culmiferous schists; and thus the precise age of the latter is demonstrated.

In regard to the rocks of the Devonian system (old *Grauwacke* of German authors), which support in mountain masses the carboniferous system above alluded to, the author offered a brief and general sketch, assuring the Section of the Geological Society, that Professor Sedgwick and himself would demonstrate that these rocks fairly represent the British system generally known as the *Old Red Sandstone*, but to which they had recently applied the term *Devonian*,—a term which foreign geologists seemed well disposed to adopt, as calculated to prevent that confusion and antiquity which had arisen from the use of the word *Old Red Sandstone*, now that it is ascertained that rocks, for the most part black and slaty, occupy, over wide districts, the same geological horizon as our *Red* rocks of Herefordshire.

Proofs of the existence of the same order and succession will be hereafter pointed out in the countries of the Hartz and the *Fichtelzeberge*; as well as upon both banks of the Rhine, in Westphalia, and Nassau, &c.; while a splendid development of the still older Silurian rocks (both upper and lower) will be pointed out, chiefly on the left bank of the Rhine; and also in Belgium, and the region around *Liege* and *Namur*, already rendered classic ground by the descriptions of D'Omalius, De Halley, and Dumont.

*New Speculum.*—In the Section A., a new, and it may turn out an important instrument, was produced, on a principle of much ingenuity. Our note upon it follows:—

Mr. Nasmyth offered a few remarks 'On the Difficulties to the general Use of Metallic Specula for Reflecting Telescopes of very large size, in consequence of their excessive Weight, and of the great Nicety required in casting and grinding them.' He then drew attention to an invention of his, viz. a plate-glass pneumatic speculum, which he exhibited to the Section. The dimensions of the plate were 3 feet 3 inches in diameter, and 3-16ths of an inch thick. It had been placed on a concave cast-iron bed, the edges only of the glass resting on a rim perfectly turned, and fastened in with bees'-wax, which rendered the apparatus air-tight, and was also of a yielding character. By removal of the air from behind the mirror, which Mr. Nasmyth effected with his mouth, sucking it out by a pipe 6 or 8 inches long, the surface of the glass, previously a plane, was pressed by the weight of the external atmosphere considerably out of the level; and by this means the focus of the mirror could be varied to any length. The form which the glass takes is, as

it were, a curve of its own making, not exactly a parabola, but more like an ellipsoid. Mr. Nasmyth, however, conceived that the cast-iron back being turned to an exact figure of any kind, the glass might be made by this simple mode to lie flat on the metal, and again, at pleasure, to resume the plane form. He then named some of the advantages which he thought would result from the use of this contrivance for the specula of reflecting telescopes.

Mr. Grove objected to this application of Mr. Nasmyth's discovery, as the mirror would present at least two refractive and two reflective surfaces, and therefore cause the multiplication of the image.

Professor Stevelly agreed with Mr. Grove, and suggested a similar treatment of metal.

Professor Forbes proposed the utility of the application of the principle to the testing the cohesion of substances.

The difficulty we have found in collecting and arranging our materials, has left gaps to be filled up hereafter in parts of our Report; so that it is rather a general outline of what has been going on, than a complete account of the proceedings. Another reason which induces us not to be very particular in this respect in the first instance is, that many of the communications are more or less known to our readers from previous accounts of meetings of London societies and institutions, and we have not had time so to weigh them as to select the most novel and important. In truth, some of them are very familiar friends, and others of so little interest, that we shall consider a notice of their leading features more to the purpose than the details by which they have been introduced, and the arguments for and against them.

In order, however, to give a fair taste of the qualities of those papers which are of popular value, we shall add here such as have reached us, and for which we have room, without destroying all our other divisions, and in the expectation of having further matters of the same kind in our future Numbers.

The first is of much importance to *Agri-culturists*; and, as this mighty Science has been excluded from the scheme of the Association, we are the more pleased to insert the only essay on the subject.

'On the Acceleration of the Growth of Wheat.'  
To the President and Members of the British Association, &c. &c.

'The British Association has not hitherto ranked the pursuit of Agriculture as a science in the arrangements of its Meetings. It is, however, a pursuit of the first importance, and of the greatest magnitude; and although, in its early stages, the assistance which science may bestow is comparatively little needed, yet the benefit it is capable of conferring becomes more and more evident as society advances, and the wants of man increase. Of its advantage to the British nation in this particular, and at the present time, there can be no reasonable doubt. Increased power and accelerated motion have been imparted to nearly every branch of national industry; and it is therefore evident that the pursuit which does not in a corresponding manner advance, must relatively retrograde. It has been questioned how far the pursuit of agriculture can be improved by scientific research. To the mind devoted to the investigation of the great powers of Nature,—of the various elements and the diversified soils,—of the numerous tribes of plants requiring their peculiar culture, and possessing their determinate properties,—surely the field

\* See former Proceedings of the British Association, in our Reports and their published volumes.



is most extensive, and the careful investigators are few. In no pursuit is the watchful eye of discrimination more required, and the absence of performed opinions more indispensably called for, than in one where the fluctuations of seasons may modify the results of the inquirer, and disturb those principles which have a generally operating effect. The well-trained mind alone can possess the qualifications of giving the fullest power, and working up with the greatest effect, the mass of material which the experienced practitioner has the best opportunity of collecting. Where these circumstances are combined, and enterprise and sobriety of thought exist together, discovery must advance, and improvement be established. The object of the present communication is to call the attention of the meeting to a statement of facts connected with the acceleration of the growth of wheat, and a consequent diminution of the period required for its occupation of the ground, and to exhibit the results of the proceeding, and the benefits deducible therefrom. It will be needful, for the sake of comparison, to call attention to the circumstance of the ordinary period of growth allotted to the wheat plant, by which its abridged period will be properly measured. The medium may be taken from the middle of October to the middle of August, a period of ten months—twelve, or even thirteen months, being not uncommon; while, for the ordinary winter wheat, from December to August may be taken as the shortest period of ordinary growth. Observation on the progress of the plant under different circumstances, and with peculiarly selected seed, led to the conviction that much of this time might still be spared on certain soils and favourable situations; and the result has shewn that a period very little exceeding five months has sufficed to perfect an abundant crop of wheat, which was sown on the 2d of March, and which was ready for the sickle on the 15th of August following—a specimen of which is here produced. This is not a solitary case—nor is it the result of a peculiar season. In the year 1835, wheat sown the 5th of March was reaped on the 12th of August; and on a previous occasion, wheat sown the 9th of March was reaped on the 11th of August, the produce being forty bushels per acre. These circumstances being determined, and the results so satisfactory, the contributory causes demand a brief investigation. Wheat is a plant requiring a deep tenacious soil for its most congenial growth; and on such soils, previous to exhaustion, it has been grown for twenty-five successive years, with liberal harvests, and without manure. Such soils, however, form a very minute portion of the land of England; and had not skill adapted others to the production of wheat, the independence of the British nation in this particular would have been far below its present standard. To the lighter and more siliceous soils these observations on the acceleration of the growth of wheat will chiefly apply. The power of adaptation, both in plants and animals, to the varying and even opposite circumstances in which they may be placed, is very remarkable; yet are the original dispositions in either case seldom wholly extinguished. When wheat is placed upon the lighter soils, its growth and security are alike promoted by artificial pressure and compacting of such soils—this is very generally known and acknowledged—and a similar regard to the other variations which altered circumstances may present, and which it is believed have not hitherto been distinctly calculated or publicly noticed, may be found worthy of the regard of the present

scientific meeting. The lighter siliceous soils, when supported by the addition of manure, possess a warm and stimulating character, and conduce to a very rapid growth of plants, but they as assuredly become quickly exhausted; and it will, therefore, be evident, even to a mixed assembly like the present, that an acceleration of the growth and ripening of the plants committed to a light soil, and a diminution of the time required for perfecting its crops, must not only be congenial to its character, but tend to economise and prolong its productive powers. These circumstances have been observed, and seized for the improvement of the pursuit of agriculture, and with the most beneficial results in various ways. The crops have been fully equal, or even superior; the occupation of the land for this purpose has been diminished half, and set free for a beneficial occupation, directly contributing to the furtherance of this in a prolonged depasture of a preceding crop by sheep, tending still further to compact the ground and obviate its natural disqualifications for the production of wheat; the risk from injury by insect devourers, and by weather, is alike abridged; and, above all, the fertile powers of the soil are at once directed to the formation and support of the ear of wheat, the truly valuable portion, instead of being uselessly expended in an excessive growth of blade or leaf, which the soil has not ultimately the power to supply with grain in just proportion. A manured siliceous soil will carry to maturity, with an accelerated step, the plant of wheat; a short stage at a rapid rate it is, by natural constitution, well calculated to perform: but it has not the strength for prolonged continuance, possessed by more powerful, yet more tardy soils. Science will at once prescribe the application. The means of accelerating vegetable growth, and the evils attending it, remain to be pointed out. Aspect, soil, situation, climate, and manure, all tend to affect the rapidity of the progress of plants towards maturity, and the discriminating mind will select the favourable station from whence to derive a supply of seed. It is an unquestionable law of vegetation, that the plant of early maturity again seeks to become so, even when placed in unpropitious circumstances—that it recedes with reluctance from the station of its parent; and the circumstance is valuable for accelerating the growth of wheat in any soil. Where it is desirable to do so has been already detailed, these are some of the means:—The crop once ripened in a period of about five months, has an acquired disposition to reach maturity again in a similar time, and although, if placed under very unfavourable circumstances, it will fail to accomplish this, it will not fail so much as seed would do which had not been grown so quickly. The nature of the plant becomes accelerated, as other plants become acclimated, and seed may thus impart changes most beneficial to the various kinds of soil. But there are still means, of a more mechanical character, for accelerating the maturity of a crop of wheat, which are frequently too much neglected, in securing by adequate seeding thickness of crop; which, it is still very generally known, conduces to regular and early ripening. The reasons of this may form an interesting subject of inquiry in another department of the Association; and although the cause of so beneficial a result may probably be found in the more effectual stopping of the rays of the sun, and a more general radiation of heat, which there takes place; yet the fact that such is the case, gives an additional means of accelerating the growth of wheat in the spot from whence seed is se-

lected, as well as in that where it is to be again deposited. This is deserving of the most marked attention, as the evils to which rapidly grown wheat is most obnoxious are best prevented by abundant sowing and compacting of the soil; both of which have been directly recommended on their own account: the rust or mildew, arising from atmospheric influence, over which man has no control, except in averting the predisposing causes, might very probably injure, most extensively, rapidly grown wheat, standing thinly on the ground; but such should not be the case, and, practically, the crops alluded to have not suffered from this cause, or any similar evil. In conclusion, I hail with delight the existence of an Association so extensive, so enlightened, and so harmonious, met together to accelerate the progress of important truths, and to disseminate their beneficial influence over an improved and rapidly improving world.

“GEORGE WEBB HALL.”

August 30, 1836.

A conversation ensued, and Mr. Webb Hall very satisfactorily answered several questions put to him. It was stated, among other things, that one hundred and fifty different kinds of wheat might be found in one field in England, and that above two hundred kinds were cultivated in Spain.

Our next paper is on a medical subject; but, with the introductory note, explains itself:—

#### SECTION E.

[This pertains to the class of papers for which we made an exception in our Monday's notice.]

‘On Alkaline Indigestion,’ by Robert Dundas Thomson. The author stated that he had discovered this form of dyspepsia in 1835, and had communicated the results of his observations to the Medical Section of the British Association, at Bristol. Since that period he had continued his researches, and had confirmed the accuracy of his first results by the examination of a very great number of cases. It has been long known that, in stomach complaints, fluids are often ejected from that viscus into the mouth, and it has been by examining the chemical constitution of these fluids, that the author has been enabled to simplify, in some considerable degree, some of the most disagreeable forms of dyspepsia. Dr. Thomson divides the fluids, which he has detected in these complaints, into *acid*, *alkaline*, and *neutral*. 1. The *acid state* is familiar to most persons. In the natural state there is no doubt that, during a certain period of the process of digestion, the contents of the stomach exhibit an acid reaction; that is to say, that litmus paper dipped into the fluid existing in the stomach becomes red, that the fluid tastes acid, and that when distilled over, a quantity of pure water having been previously added, the fluid, which passes into the receiver, exhibits a faint acid reaction. This does not occur, however, according to Schulz, during the first half-hour or hour of the process of digestion; the acid would therefore appear to be generated during the process. [The discussion as to the nature of the acid, Dr. Thomson said he would reserve for the Chemical Section.] When this natural acid, as it may be termed, accumulates to a certain extent, and symptoms of disease exhibit themselves in the form of a burning sensation about the pit of the stomach, with acid eructations, which do not, however, alleviate the pain; this is the characteristic symptom of *acid indigestion*. 2. The second form of indigestion indicated by the fluid ejected from the stomach, Dr. Thomson terms *alkaline indigestion*. This is characterised by a violent pain in the region

of the stomach, accompanied frequently with headach and faintness, with a sensation of spasm or contraction in that viscus; this sensation goes on increasing till it frequently becomes intolerable, and at last, when the agony is complete, the patient is suddenly roused by a determination to the mouth of a large quantity of fluid, which must be immediately evacuated, to give place to a succession of similar occurrences: at last, however, the flow of fluid becomes so abundant as to institute an actual stream; it continues to flow for some time, but gradually diminishes in quantity, and at length ceases, and with it the pain in the stomach. The latter is the characterising symptom of *alkaline dyspepsia*, or *pyrosis*, as it has been frequently termed. But hitherto it has been always confounded with other forms of indigestion. Dr. Prout has published an account of his examination of the fluid of pyrosis, and has stated that it was acid. The fluid, however, was not procured by himself, but was sent him from one of the hospitals, where the mistake was very likely to occur. This form of indigestion occurs much more frequently than is generally supposed. Dr. Thomson stated, that out of forty or fifty patients daily seen at Blenheim Street Dispensary, in London, he generally met with one or two affected with symptoms of this description. It frequently occurred in coincidence with affections of other organs, as of the liver, &c., and was often of such a pressing nature, that it required more of the skill of the medical man than the original disease. Certain it was, that it was absolutely necessary to treat it with as much care as the original complaint, and if the action had been allowed to go on for some time unchecked, the second affection became as firmly fixed as the original disease which had induced it; so that after the removal of the latter, a second disease, as firmly rooted as the first, required to be taken under the physician's care. The treatment consisted of the administration of acids, tonics, and narcotics, which required to be prescribed with care, otherwise the acid indigestion was frequently induced, which was as difficult to eradicate as the alkaline form. 3. The last form of indigestion, as indicated by the fluid ejected by the mouth, which the author had met with, was a neutral state, which was of much rarer occurrence. Dr. Thomson had, however, met with several cases, and had succeeded in overcoming the disease by the use of tonics.

Our third communication is one of great electrical interest. It was read at Section B, where previously nothing had struck us as worthy of particular notice, except a new safety lamp, the foreign inventor of which found too much difficulty in explaining it, owing to his want of acquaintance with our language. It seemed, however, to be a very ingenious contrivance:—

“On a Small Voltaic Battery of extraordinary Energy, by W. R. Grove, Esq. M.A.”

“In a letter, published in the ‘Philosophical Magazine,’ for February, I stated some reasons for hoping that by changes in the constituents of the combination of four elements, we might greatly increase their energy. At that period I sought in vain for improvements, which a fair indication convinced me were attainable; but being in the country, all my experiments were with copper, as a negative metal. I was consequently unable to use concentrated nitric acid as an electrolyte, and its importance never occurred to me until forced upon my notice by an experiment which I made at Paris for a different object. This object was an endeavour to prove that the disso-

lution of gold in nitro-muriatic acid was an electrical phenomenon, or rather that this (and as I believe, with Sir H. Davy, every other chemical phenomenon) could be resolved into an electrical one by operating upon masses instead of molecules. The experiment was the following: The extremities of two strips of gold leaf were immersed, the one in nitric, the other in muriatic acid, contact between the liquids being permitted, but mixture prevented by an interposed porous diaphragm; in this case the gold remained undissolved for an indefinite period, but the circuit being completed by metallic contact, either mediate or immediate, the strip of gold in the muriatic acid was instantly dissolved. Thus it seems, that the affinity of gold for chlorine is not able alone to decompose muriatic acid, but when aided by that of oxygen for hydrogen, the decomposition is effected: this phenomenon bears much analogy to ordinary cases of double decomposition. The two gold strips in this experiment being connected with a galvanometer, occasioned a considerable deflection; and it now occurred to me, comparing this experiment with my previous observations, that these same liquids, with the substitution of zinc and platinum for the gold leaf, would produce a combination of surpassing energy. My expectations were realised; and on the 15th April last, M. Mecquerel presented to the French Academy a small battery of my construction, consisting of seven liqueur-glasses, containing the bowls of common tobacco-pipes; the metals, zinc and platinum; and the electrolytes, concentrated nitric and dilute muriatic acids. This little apparatus produced effects of decomposition, equal to the most powerful batteries of the old construction (see ‘Comptes Rendus,’ April 15th, and ‘Philosophical Magazine’ for May). I have since this tried various combinations upon the same principle, and though some of the rarer substances—such, for instance, as chloric acid—have produced powerful combinations, I have found none superior, and few equal, to the above. I therefore directed my attention to utilising these materials, and rendering the apparatus more economical, although I soon found that it was not so expensive as it at first appeared; the platinum being unaltered, and the concentrated acid producing a more durable effect than the electrolytes usually employed. Dilution of the nitric acid with water diminished the energy, but in the course of some experiments on the conducting power of different liquids, I found that nitro-sulphuric acid (a mixture of equal parts, by measure, of the two acids) acted as an electrolyte much as nitric acid; that it was an excellent conductor; and yielded oxygen at the anode, and no hydrogen at the cathode. Applying this to my battery, I found it succeed admirably, and hence a considerable diminution of expense. On the side of the zinc, I found that salt and water was but little inferior to dilute muriatic acid. It also does away with the necessity of amalgamating the zinc; but it sometimes, though very rarely, disaggregates the porous mass from the crystallisation of the nitrate of soda: excepting, therefore, in very large batteries, where expense is a material consideration, I should prefer employing muriatic acid diluted with four or five times its volume of water. By using flattened parallelopiped shaped vessels, instead of cylindrical, the concentrated acid is much economised, the space diminished, and the metals approximated.\* The hastily con-

\* “According to Professor Ritchie, the power is inversely as the square root of the distance between the metals.”

structed battery which accompanies this note, consists of an outer case of wood (it should be of glazed earthenware),  $7\frac{1}{2}$  inches by 5 and 3, separated into four compartments by glass divisions; into those compartments are placed four flat porous vessels, the interior dimensions of which are  $7\frac{1}{2}$ , and  $\frac{3}{8}$  of an inch; they contain each three ounces, by measure; the metals, four pair, expose each a surface of 16 square inches; and the battery gives, by decomposition of acidulated water, 3 cubic inches of mixed gases per minute; charcoal points burn brilliantly; and it heats six inches of platinum wire  $\frac{1}{8}$  of an inch diameter; and its effect upon the magnet, when arranged as a single pair, is proportionately energetic; it is constant for about an hour, without any fresh supply of acids. The porous vessels are identical in their constitution with the common tobacco-pipe. As far as my experiments go, its power, with reference to the common constant battery, is, *ceteris paribus*, as 6 to 1, but the proportions vary with the series. The cost of the whole apparatus is about 2l. 2s. During the operation of this battery, the nitric acid, by losing successive portions of oxygen, assumes, first, a yellow, then a green, then a blue colour, and, lastly, becomes perfectly aqueous; hydrogen is now evolved from the platina, the energy lowers, and the action becomes inconstant. It is worthy of remark, as an argument for the secondary nature of metallic precipitation by voltaic electricity, that the oxidated or dissolved zinc remains entirely (or at least by far the greater portion) on the zinc side of the diaphragm, the hydrogen alone appears to be transferred; and yet the reversal of affinities, which the theory of reduction by the nascent hydrogen supposes, is an enigma difficult of solution. I have invariably observed, in this battery, a current of endosmosis from the zinc to the platina, or with the current of positive electricity. The rationale of the action of this combination, according to the chemical theory of galvanism, appears to be as follows: In the common zinc and copper combination, the resulting power is as the affinity of the anion of the electrolyte for zinc, minus its affinity for copper; in the common constant battery it is as the affinity of the anion for zinc, plus that of oxygen for hydrogen, minus that of oxygen for copper. In the combination in question, the resulting power is as the affinity of the anion for zinc, plus that of oxygen for hydrogen, minus that of oxygen for azote.\* Nitric acid being much more readily decomposed than the sulphate of copper, resistance is lessened and the power increased; and no hydrogen being evolved from the negative metal, there is no precipitation upon it, and, consequently, no counter-action. I need scarcely add a word as to the importance of improvements of this description in the voltaic battery. This valuable instrument of chemical research is thus made portable; and, by increased power in diminished space, its adaptation to mechanical, and especially to locomotive purposes, becomes more feasible.”

#### POSTSCRIPT.

At the General Meeting, at three o'clock, the President in the chair, the Report of the last meeting was read and signed.

The place appointed for the next meeting was Glasgow, and the time fixed, Thursday, September 17th; the General Meeting to assemble on the preceding day. This change was to accommodate the religious feeling of Scotland

\* “I have thrown out of the case the resistance to decomposition of the electrolyte in contact with the zinc, as common to the three combinations.”



against Sunday travelling, which would have been violated if the meeting had taken place on the Monday, as heretofore.

Other applications were made from Hull, Manchester, Plymouth, and York.

The Marquess of Breadalbane was elected president; Dr. Macfarlane, principal of the University, Lord Greenock, Sir T. Brisbane, and Sir D. Brewster, vice-presidents; Dr. J. P. Nichol, Andrew Liddell, and John Strang (or Strachan), Esqrs., local secretaries; and Charles Forbes, Esq., local treasurer.

On the retirement of the Dean of Ely from the office of one of the general secretaries, Major Sabine was elected as his successor; and, on the earnest entreaty of the council and the members at large, Mr. Murchison, who had also signified his intention to retire, was induced to remain at least another year, it being represented to him how detrimental it would be to the interests of the Association, if both general secretaries withdrew their services at the same time.

Professor Phillips (called away by the dangerous illness of his uncle, Mr. Smith, the father of our geological science) was re-elected assistant general secretary; Mr. Taylor, treasurer; Colonel Sykes, Mr. Porter, and Mr. L. Horner, auditors; a numerous council, nearly as before, and Mr. James Yates, as their secretary.

#### REVIEW OF NEW BOOKS.

##### IRELAND.

[Second notice.]

ACCORDING to our promise last week, we return to the various works on Ireland which have accumulated upon our table. Mr. Fraser's *Guide through Ireland* appears carefully executed; but we think that it might have been made what is called "a more readable" book. For instance, Kilmallock is dismissed in the following summary manner:—

"Built by the Earl of Desmond, and demolished during the wars of the Commonwealth; the ancient walls, gates, and houses, as well as the ecclesiastical and civic ruins which are scattered around, will recall its former grandeur and prosperity. As there is but little business carried on in this small place, it has a desolate aspect, but possesses great interest for the antiquarian and lover of the picturesque. The principal ruins are the abbey, now used as the parish church, and the interesting remains of the Dominican friary. In the latter is the tomb of Fitzgerald, the White Knight. The Camogue stream runs close to the town."

As brevity is said to be the soul of wit, we are ready to acknowledge this to be the wittiest account of Kilmallock extant; but after reading the romantic historical details which Lady Chatterton has collected respecting this interesting town, we cannot help thinking that Mr. Fraser might have said something more to direct the attention of the traveller to a place distinguished as "the Balbec of Ireland."

Without travelling in the country described, book in hand (see *Literary Gazette*, No. 920, September 6th, 1834), it is impossible to test the accuracy of guide-book statements; but, in turning over the pages of Mr. Fraser's work, and following, as a kind of test, the tour of Lady Chatterton, we are struck by some discrepancies. At p. 174, Mr. Fraser says, speaking of that wild and lovely district, Glengariff, "The road which traverses the glen is suited only to pedestrians." Now, it would appear from Lady Chatterton's "Rambles," vol. i. p. 99, that there is no difficulty in driving through Glengariff. This is an important point for travellers to be correctly informed

upon, as it may make a serious difference in their arrangements.

We also observe that Dingle, p. 216 of Fraser's *Guide*, is noticed without a single word about the numerous antiquities in its neighbourhood. Of course, it would have been impossible to introduce minute descriptions of them; but they might have been mentioned as objects deserving attention: that they are so we cannot doubt, when we find Lady Chatterton devoting six days and one hundred pages to their examination.—See "Rambles," vol. i. from page 127 to 227.

On the whole, however, we believe that Mr. Fraser's *Guide* will prove a useful hand-book for tourists; although we cannot help feeling that, even within the same limits, much more might have been done to enrich the matter, which appears to us too cold and statistic for an agreeable travelling companion.

Of an equally cheap, and, what is singular, excellent *Map of Ireland* published under the superintendence of the Society for the Diffusion of Useful Knowledge, we cannot speak in terms of too high praise. The precision, the distinctness, the pains bestowed upon spelling those "heathenish Irish names," as Charles II. termed them, must have been the work of vast time, labour, and patience. Whenever we have referred to this map, and we have frequently done so for nearly the last twelve months, the result of our reference has been the conviction that it could have been compiled by no other hand than that of the Hydrographer of the Admiralty, to whose silent labours in the improvement of naval charts the whole civilised world bears witness. Among the peculiar features of this map, besides an important statistic table, a list is introduced of the round towers of Ireland, with their present state shown by the following abbreviations:—*p.* perfect, with conical cap; *np.* nearly perfect; *i.* imperfect; *s.* only the stump; *f.* foundations only; *v.* remarkable variety in the construction. Dr. Ledwich, who gave what was considered a very complete list of the round towers which had been discovered in Ireland, enumerates sixty-five; but the list given in the Society's map extends to no less than one hundred and eighteen: a convincing proof, if indeed proofs were wanting, how little Ireland is known even by her actual residents. The following sixteen round towers, according to the map before us, remain in a perfect state:—

1. Antrim ..... 95 feet ..... Antrim County.
2. Ardmore ..... 90 do. .... Waterford.
3. Cashel ..... ..... Tipperary.
4. Clonmacnoise ..... ..... King's County.
5. Clones ..... ..... Monaghan.
6. Devenish ..... 82 feet ..... Fermanagh.
7. Fertagh ..... 96 do. .... Kilkenny.
8. Glendalough ..... ..... Wicklow.
- (St. Kevin's Kitchen.)
9. Kildare ..... ..... Kildare.
10. Kilkenny ..... ..... Kilkenny.
11. Kilmacduagh ..... ..... Galway.
12. Roscrea ..... ..... Tipperary.
13. Sier Kieran ..... 20 feet ..... King's County.
14. Swords ..... 73 do. .... Dublin.
15. Timahoe ..... ..... Queen's County.
16. Turlough ..... ..... Mayo.

To Miss Beaufort, we presume, we are indebted for this catalogue of Irish round towers; and it forms a most valuable appendix to that accomplished lady's "Essay upon the State of Architecture and Antiquities, previous to the landing of the Anglo-Normans in Ireland," published in the fifteenth volume of the "Transactions of the Royal Irish Academy."

Mr. Graham's *History of Ireland, from the Relief of Londonderry in 1689, to the Surrender of Limerick in 1691* (No. 4 on our list), notwithstanding that the author is distinguished as an unflinching advocate of the Protestant

cause, and a powerful party-writer, is compiled with that careful historical industry, chiefly from contemporary and respectable authorities, which are fairly quoted, that we must admit, as lawyers would phrase it, "a good case has been made out."

It is unnecessary for us to enter into a review of this period, but the following account given by Mr. Graham, in the appendix, of the discovery and reinterment of the remains of Walker, the gallant defender of Londonderry, will gratify the curiosity of some of the admirers of that distinguished man:—

"On Tuesday, the 16th of October, 1838, the church of Donoughmore at Castle Caulfield, being in process of repair by the Ecclesiastical Commissioners, it was found necessary to lower and level the floor of it. In that part of the chancel immediately under the monument of Governor Walker, the workmen discovered a full-sized oak coffin, containing the remains of his widow, who, in 1703, caused his bones to be brought there from the banks of the Boyne, where his body had been interred, and had lain for thirteen years. They were this day found in a small oak box, in which this 'widow indeed,' full of the endearing recollections of happier days, had deposited them. This worthy body was the mother of four sons of the renowned Walker, who at his death were serving in King William's army; and each of whom, in justice to their immortal father's services, and their own, ought to have inherited one of the forfeited estates. John Walker, the eldest son, on a petition to the House of Commons, obtained a pension of two hundred pounds a-year, which he enjoyed until the beginning of the reign of George the First, when he was deprived of it by the parsimony of the triumphant Whigs. Of the other sons there is no record, save that the daughter of one of them was the grandmother of the late Mrs. Calbeck, of Lisburn. The Walkers were a Yorkshire family. The father of the governor of Derry was the Rev. George Walker, sen., rector of Cappagh, county Tyrone, the friend and confidential adviser of Dr. Bramhall, bishop of Derry, when this prelate was nobly using his private means and public influence in regaining the alienated property of the Church of Ireland, and purchasing the advowsons of the impropriated rectories, which he added to the vicarages throughout the diocese. He sent his son and namesake to Glasgow College for education, and on the young man's return, soon after the restoration of King Charles the Second, he was presented to the rectories of Donoughmore and Errigal Keerogue in the county of Tyrone. Walker was in the sere and yellow leaf of life when he went to Derry in 1689, being then, according to credible tradition, 71 years of age. His sister Anne married William Maxwell, Esq., of Falkland, high sheriff of the county of Monaghan in the year 1691, and who was great-grandfather of the present representative of his renowned ancestor—the Rev. Thomas Carpendale, rector of Donoughmore. Mr. Carpendale, with Edward Evans, Esq., son of the Rev. George Evans, who had been upwards of thirty years rector of Donoughmore, Alexander Mackenzie, Esq., and a few others, naturally regardful of the remains of this great and good man, caused them to be taken carefully from the decayed box in which they were found, and putting them, and those of his widow, into smaller boxes, enclosed both, with suitable inscriptions, in a leaden coffin, which being laid in one of deal plank, was solemnly deposited in the hero's grave by his reverend

descendant and successor, assisted by the Rev. John Graham, author of the 'History of the Siege of Derry,' and also by one of the oldest apprentice boys of the maiden city. In the case with Governor Walker's remains was placed a flint glass-bottle, hermetically sealed, containing the following writing on parchment. 'Be it recorded, that whilst this church was undergoing repair, in the year 1838, search was made beneath the monument of the Rev. George Walker, immediately opposite to the communion-table, at the eastern end of the church, and south side of the aisle, to ascertain whether his bones were deposited there, agreeable to the inscription on the monument erected by his widow, in the year 1703. We whose names are hereunto subscribed, having assembled in said church on Tuesday the 16th October, 1838, and having made search immediately beneath said monument fixed in the wall, have found, in a full-sized oak coffin, the remains of the widow, and in a small oaken case adjoining were deposited bones which had not the appearance of regular interment in a coffin, but corresponding with the words of the monument, 'Ossa reconduntur,' &c. &c. Now, to testify our veneration and respect for the memory of the illustrious Walker, we herein carefully replace the bones, and restore them in their former position, together with this record.' [Here follow five signatures]. Previous to the reinterment of the bones a cast was taken of the skull, which was perfectly sound, and in which the organs of intelligence and firmness were remarkably developed. Walker afforded an instance of the value of a classical education and habits of literary composition to a military man; proving that the hero capable of recording actions in which he has been concerned, with modesty and without exaggeration, is more likely to get full credit for his own merits, than the illiterate warrior, who requires another man's pen to do justice to him."

About the part which Walker acted, there has been much discussion. In our opinion, the circumstances of the times forced him into the position which he held during the memorable siege of Derry. He afterwards, as is well known, proceeded to London, where he was received in the most enthusiastic manner. While in London, Walker published his "Diary of the Siege of Londonderry;" in the address prefixed to which he apologises, as a churchman, for having acted in that service a part which might with more propriety have been done by other hands. It has been asserted that the reward of Walker's conduct was the bishoprick of Derry, and therefore it is stated by the late Mr. O'Driscoll, in his "History of Ireland,"—a work, the impartiality of which has been, and certainly with some reason, extolled,—that *this man* (thus contemptuously is the noble and enthusiastic George Walker referred to) was unnecessarily present at the Boyne. "Walker's exploits at Derry," adds O'Driscoll, "might have had an excuse in the peculiarity of his situation; but neither his exhibitions in London, nor his presence at the Boyne, can be justified."

We give this passage as a specimen of the way in which Irish history is written even by the most impartial. Now, the fact is, that Walker was a hero in Derry, the advocate of his brave fellow-sufferers in London, and in the course of his duty as a Protestant clergyman appointed chaplain-general of the army, was present at the battle of the Boyne, where he was killed. What might have been the grateful intentions of King William towards Walker, as to promoting him to be bishop of

Derry, it is impossible that the appointment could have taken place, for that see was not vacant until the day previous to the battle of the Boyne, and William, therefore, could not have known of the vacancy before Walker's death.

After Mr. Graham's, the next Irish book on our list is Mr. Smyth's "*Chronicle of the Law-Officers of Ireland*," containing lists of the lord-chancellors and keepers of the great seal, masters of the rolls, chief justices and judges of the courts of King's Bench, Common Pleas, and Exchequer, attorneys and solicitors-general, with the sergeants at law, from the earliest period; dates and abstracts of their patents; fees and allowances from the crown, tenures of offices, references to the records, and patents of precedence; also a chronological table of the law officers, with the promotions, deaths, or resignations, from the reign of Queen Elizabeth to the present time; judges' salaries in 1690, and as fixed by the 2d and 3d William IV.; with an outline of the legal history of Ireland, and copious indexes."

After fairly transcribing this, the title-page of Mr. Smyth's volume, which, if executed with accuracy, must be a valuable work of reference, we feel that very little is left for us to say in the way of criticism. However, at page 15, we may be allowed to inquire whether the lord-chancellor mentioned twice as Robert Fitz-Eustace, Lord Portlester 1472 and 1486, is not the identical Sir Rowland Fitz-Eustace, who is mentioned in the same page and intermediate year of 1474, but not as Lord Portlester? If we supposed that our readers generally took much interest in an examination of this nature, we have no doubt that a little more time than it is at present in our power to bestow upon the investigation of this promising title-page, might lead us to cross-examine Mr. Smyth in a manner which would not be perfectly agreeable to him. If any one, however, will undertake to fill up the outline of the legal history of Ireland—to give life to the skeleton of Mr. Smyth, we pledge ourselves that it would be a most acceptable work to the public. And here, for the present, we must close the notice of our Irish heap of books, to resume next week with Mr. Otway's "Tour in Connaught," from which we can venture to promise our readers some sketches of Ireland and the Irish by a master hand.

#### A Paper:—of Tobacco.

[Second and concluding notice.]

"No people in the world smoke worse tobacco, or pay so dear for it, as the people of this country. The very worst kinds of leaf, which nowhere else could find a market, meet with a ready sale among the English manufacturers; and, after being duly liquored—with a solution of copperas as is commonly reported—are worked up into shag. Some of this veritable mundungus is so strong, that a couple of pipes are sufficient to set the head of an Irish coal-heaver a-swimming. In consequence of the high price of tobacco, most of the lower classes prefer that which produces the most powerful effect on the nervous system in the shortest time; and it is from this cause that strong tobacco-leaf commands in the English market a comparatively better price than such as is mild and fine flavoured. Jonathan Carver highly commends the tobacco grown in the Northern States of America, on account of its being stronger than that grown in the South: 'As much time,' says he, 'would be required to smoke one pipe of it, as three of that which is generally used: before so great a quantity of

the vapour could be drawn from it as to prove hurtful, the smoker, from intoxication, would be unable to continue his amusement.' This commendation of strong tobacco is something like a north-country fishwoman's praise of a sample of very strong Leeward Island rum: 'A single glass of it is like to burn your very heart out, and two will make you comfortably drunk.' The high duty, nine shillings per pound, imposed on foreign cigars and foreign manufactured tobacco, not only gives encouragement to smuggling, but renders it almost impossible for consumers to obtain good home-manufactured tobacco and cigars, except at the price charged for foreign. The immense number of small cigar-shops in London sufficiently demonstrates the great profits that are derived from retailing English manufactured Havannahs at the price of genuine Woodvilles or Silvas. Though our manufacturers purchase the leaf as cheap as the Dutch, yet much better home-manufactured Havannah cigars can be purchased in Holland for ten shillings per pound than in England for twenty-four shillings; and the same kind of kanaster tobacco,\* which is here charged eight shillings per pound, can be there bought for three shillings. Even after allowing three shillings per pound for difference in the duty, the price charged by the English retailer beyond that of the Dutch is eleven shillings per pound on the cigars, and two shillings per pound on the kanaster tobacco. Under such circumstances it really cannot be a matter of surprise that a poor gentleman should prefer dealing with a bold smuggler rather than with a petty licensed extortioner. Were the duty on foreign cigars and foreign manufactured tobacco reduced to three shillings, and that on home-manufactured to one shilling per pound, there can scarcely be a doubt that the net receipt at the Exchequer, on account of those articles, would be considerably increased. The smuggler's trade would be almost totally destroyed, for the chance of profit would scarcely balance the risk of loss; those who now smoke one cigar would smoke two: and the consumption of the finer kinds of tobacco would at least be trebled. The saving tradesman, who now orders 'a screw† of shag and a small-headed pipe,' with his sixpenny-worth of gin-and-water, would treat himself to half-an-ounce of kanaster, and smoke a pipe of more capacious bowl. At the Havannah the price of the best cigars is about 6s. a-pound, which, allowing the general average of one hundred and twenty to the pound, is at the rate of little more than a half-penny each. In Spain, where the manufacture is monopolised by the crown, cigars of the best Havannah leaf are sold at the royal factories in Seville and Malaga—the only places where they are made—at the rate of 7s. 6d. per pound, which is just three farthings each.

"The principal kinds of tobacco smoked in this country are:—Turkey, Varinas, and kanaster, consumed by the more wealthy classes who can afford to purchase fine tobacco, and indulge in a real meerschaum; Orinoco and Maryland, chiefly in favour with incipient amateurs; returns, the delight of steady, seasoned smokers; and shag, the favourite of all who like a 'strong article.' Pigtail, or small twist tobacco, shired small, is not unfrequently smoked

\* At the most respectable shops at the 'west end,' genuine Havannahs cannot be purchased for less than 30s. per pound; and, for exceedingly fine samples, two guineas are not unfrequently charged."

† A penny paper of tobacco is, in London, termed a screw. 'I say, mister,' inquired a sailor one day of a pot-boy, at a public house in Wapping, who had brought what he considered a very small pennyworth, 'do you call this here a proper full-sized screw?' 'Yes.' 'Why, then, I can only tell you its a precious soft-roed one.'"

by many persons, but more particularly in Scotland; and a few iron-nerved smokers occasionally take a pipe of negro-head. The best Turkey tobacco is of most delightful flavour, and is so mild that three or four large pipes affect the head less than a couple of pipes of the mildest English returns. The chief objection to the use of this kind of tobacco is its excessively high price,—from twelve shillings to fourteen shillings per pound. Turkey tobacco is frequently called Latakia, from the name of the port in Syria from which it is chiefly shipped to England and other countries in Europe. \*

"Varinas, so called from a town and province of the same name in Colombia, celebrated for excellent tobacco. Varinas is usually imported in rolls, formed of the leaves of the tobacco spun into a kind of thick twist. By many smokers of unquestionable taste it is preferred to Turkey, from its being rather stronger, and having, as they say, more of a real tobacco flavour. Most of the tobacco imported into this country from Colombia and Guatimala,\* is sold as Varinas; and the present price is about ten shillings per pound. Kanaster, or canaster, derives its name from the large wicker or cane baskets, called *canastros* by the Spaniards, in which the finest kinds of tobacco used formerly to be imported into Europe from Spanish America. The spelling, kanaster, or sometimes k'naster, we owe to the Germans and Dutch, by whom this kind of tobacco is highly prized. The very best kanaster is of the growth of that part of Spanish America which lies between the equator and the tenth degree of north latitude. It is mostly imported in rolls, similar to Varinas, which is only a superior kind of kanaster. A considerable proportion of the tobacco sold under this name, both in England and on the Continent, is not genuine, but is mixed with an inferior kind of leaf. Genuine kanaster is comparatively mild and of fine flavour, while that which is adulterated is frequently rather strong, and sometimes has a peculiar druglike and rather musty smell. A mixture of one-third choice Varinas to two-thirds of mild returns—(Taddy and Co.'s, 45 Minorities, to my taste is the best)—will generally be found superior to most of the kanaster that is to be had of small retail dealers. The present price of kanaster is eight shillings per pound. Orinoco is not, as its name would seem to imply, manufactured from tobacco grown on the banks of the river Orinoco, but from a kind of sweet-scented, mild Virginia. It differs but little from Maryland, except in being lighter coloured, rather milder, and of a sweeter flavour. Both kinds are chiefly consumed by persons who find returns too strong. They are pleasant enough to smoke when nothing better can be had; but they both have the effect of rendering the mouth parched and dry, and of exciting a prickly sensation in the tongue. The present price of Orinoco is sixpence, of Maryland fivepence, per ounce. The tobacco called returns is manufactured from the best and mildest kind of common Virginia leaf, with the stalk taken out. The name returns, as applied to tobacco for smoking, is of comparatively recent date. About forty years ago, short-cut was the favourite with those for whom the common shag

was too strong; and as this kind of tobacco, in order to make it sufficiently small, was rubbed through a sieve, the comparatively long shreds or out-siftings, which would not pass through the wires, were called returns. The smoking public having become tired of short-cut, on account of its small particles frequently getting into the stalk of the pipe and stopping the draught, the manufacturers tried them with a sample of returns, under the name of long-tails. The quality was approved of, for it was precisely the same as that of short-cut; but as the appellation was not fancied,—it was even worse than shag—the manufacturers changed it to the old trade name of returns. Modern returns is, therefore, almost the very same as old short-cut unsifted. \*

"Shag tobacco has obtained its distinctive name from its being so finely cut that the filaments appear like so much shag, the old name for short and matted wool or hair.\* It is manufactured of the strongest and very worst kind of leaf, and is chiefly consumed by the poorer classes. Persons of a nervous temperament, who take little exercise, ought particularly to avoid smoking this kind of tobacco, as its frequent use is extremely apt to induce paralytic affections. There can be little doubt that many of the cases of palsy among the poorer classes engaged in sedentary employments, are in a great measure owing to their immoderate indulgence in stupefying shag tobacco. Pigtail, when smoked, is equally as strong as shag. The present price of shag is fourpence, and of pigtail fourpence-halfpenny, per ounce. Negro-head is formed of the leaves of tobacco steeped in molasses, and tightly twisted together. It is generally very strong, but is seldom smoked alone. The flavour of good negro-head is extremely sweet. A smoking friend of mine, who is fond of trying new mixtures, says that Orinoco and Maryland, and even mild kanaster, is materially improved by a small portion of negro-head cut small and placed as a priming above the charge. The present price of negro-head is fivepence per ounce. The quantity consumed is very trifling. Sailors in the West India trade sometimes bring a little home to present to their smoking friends."

But then comes the discrimination:—

"A very considerable portion of the cigars sold in this country as 'real Havannahs,' are formed of a very inferior kind of leaf, with only the outside of better quality. A person who has a nose and a palate will judge of a cigar from its flavour, and not decide upon its goodness from the circumstance of its burning to a white ash. I most earnestly recommend all smokers who cannot afford to buy a box of a respectable dealer, to abstain from buying threepenny mock Havannahs at little paltry 'bacco-shops, for they pay at least a third more for the article than they justly ought.† The man who should establish a retail shop for the sale of cheap and good cigars, somewhere between Drury Lane and Coventry Street, would deserve well of all 'gentlemen about town,' who purchase their Havannahs by sixpenny-worths, and doubtless would in a short time realise a handsome fortune. A joint stock company for supplying the public with tobacco and cigars at a moderate price,—with his Royal Highness the Duke of Sussex at the

head of the directors, and the Duke of Devonshire trustee—would be a much better speculation than the Genuine Milk and Cream Company."

This would, indeed, be the cream of the joke; and a fortune out of smoke would be quite *à propos* after the famous snuffman's motto on his carriage:—

"Who would have thought it,  
That noses could have bought it?"

We pass over all the observations on chibooks, meerschaums, pipes, tobacco-stoppers, &c. The following old custom, if revived, seems to offer a vent for much of the poetry which it falls to our lot to review—volumes of poetry conjoined with volumes of equally perishable smoke.

"From a passage in an old English book, printed about 1597, we learn that tobaccoists were accustomed to purchase unreadable poems and pamphlets for the purpose of wrapping their tobacco in; and from the following verses in 'Drunken Barnaby's Journal,' probably printed in 1647,\* it appears that tobaccoists were then accustomed to decorate their papers with a motto:—

"A shop neighbouring neare Iaccho,  
Where Young vends his old tobacco;  
As you like it, sometimes sealed;  
Which impression since repealed,  
'As you make it,' he will have it,  
And in chart and front engrave it."

Modern tobaccoists have frequently a conundrum printed on their ounce and half-ounce wrappers."

And herewith we conclude. Should the votaries of this filthy custom think proper to make wrappers of this sheet of paper they are welcome; and Mr. Scripps, our publisher, will be ready to supply it stamped or unstamped, for the same office. Or he will be ready to make a contract with the Duke of Sussex, the Duke of Devonshire, and other Directors and Trustees of the Genuine Cigar Joint Smoke Company, when it shall be established! His address is, No. 7 Wellington Street, Strand; and, N.B., no connexion with any other shop.

#### MISCELLANEOUS.

*Histoire du Mont Saint-Michel, et de l'Ancien Diocèse d'Avranches.* Par l'Abbé Desroches. 2 tomes 8vo. et atlas fol. Caen, 1838. Mancel; London, Dulau and Co.

THIS is a very comprehensive, and we may add valuable, acquisition to historical literature. The work embraces every event, from the most remote period to the present time, even to the middle-age superstitions and miracles, in which the Abbé Desroches is a more than credulous believer. This is, perhaps, the greatest fault of the volumes under consideration; for the author attaches importance to, and draws conclusions from, what he supposes to be facts, but which are really nothing more than monkish legends or perversions. With this drawback, we cannot place sufficient reliance on other statements which are borne out by facts, though always more or less coloured by the same credulity. The author is, in other respects, an industrious searcher for truth; and, had he exercised a little more discrimination, we should have been able to speak in higher terms of his laborious undertaking. As it is, we are compelled to dismiss it with this slight

\* "A tobaccoist's sign about that period was not unfrequently a lighted pipe and a chafing-dish. The sign of the blackmoor smoking, with a roll of tobacco at his feet, is of venerable antiquity, being as old as the reign of James I. The sign of the Highlander and snuff-mill is of comparatively recent date. It seems to have been first introduced by the 'trade' about the commencement of the reign of George II., when the Earl of Bute was what Lord Melbourne is."

\* "By a Treasury order, Guatimala and Colombia tobacco may be imported in packages, containing not less than ninety pounds. East India tobacco may be imported in packages of not less than one hundred pounds. Tobacco from all other places must be imported in packages, cases, or hogheads, if not less than four hundred and fifty pounds net weight. Turkey tobacco may be imported in smaller bags or packages, provided the outer case contain not less than four hundred and fifty pounds net weight. Cigars are not allowed to be imported except in packages or cases, which contain at least one hundred pounds."

\* "Shag was at first used to denote generally all kinds of tobacco when cut into thin filaments; though at present it is restricted to the cheapest and worst."

† "A pound of home-made Havannahs usually contains about 120; the amount of which at 3d. each is just 3s. The wholesale price of home-made Havannahs to the 'trade' is about 14s. per pound."



notice; though we are free to admit that its merits as a history, and foundations for historians, are more than a compensation for its errors of over-belief.

*The Forest Planter and Pruner's Assistant; being a Practical Treatise on the Management of the Native and Exotic Forest Trees commonly Cultivated in Great Britain, respecting which every Useful Information is given. Illustrated by Engraved Figures.* By J. Main, A.L.S. Pp. 251. London, 1839. Ridgway.

ONE of the most useful, practical, and valuable works that has been published. It seems to us to be perfectly sufficient for all purposes of instruction, and that planters, gardeners, woodmen, need do nothing else than take Mr. Main's volume in their hand, and attend to its directions in every matter connected with their occupations. If they do so, they will find their work rightly done, and great improvements made in every thing committed to their charge.

*Letter to the Queen on the State of the Nation; by a Member of Parliament.* Pp. 27. (London, 1839. W. J. Cleaver.) A Pamphlet on the Conservative side, manifesting some sound constitutional principles, and evidently the work of an individual who has enjoyed political opportunities for accurate observation.

### LITERARY AND LEARNED.

#### THE BRITISH EMPIRE IN THE EAST.

By COUNT BJORNSTJERNA, the Swedish Ambassador.  
[Continued from Page 538.]

#### 3d. *What prospect of stability has the British power in India?*

This extensive question must be considered from two points of view; that of the inward state of British India, and that of its outward political state. With regard to the former, the present flourishing state of this kingdom, the mildness of its government, and the order generally prevailing there, ought certainly to ensure the stability of the British empire; for what better can India wish than the continuance of the present state of things. But he must be indeed ignorant of the human heart who should believe that these advantages, how great soever they may be, should be able perfectly to compensate a nation for the loss of its independence, and reconcile it with the thought of having been conquered, and that too by a nation coming from a great distance, belonging to quite another race, and professing another religion,—a nation which is even considered to be *unclean*, and is avoided by the Hindu as causing *moral contamination*. Besides this general cause, there are several others which more or less contribute to the undermining of the British power in India. Among these may be mentioned the number of deposed kings and princes, degraded governors, rayas, nabobs, and zemindars, that are in the country, who, although they are well used by the British government, cannot forget the loss of their *musnuds* (thrones); and they and their followers are therefore ready to take the first opportunity of regaining their regretted power. India is also full of discharged soldiers from the times of the *Mahrattas* and *Pindarries*, who, as belonging to a warrior caste, and besides accustomed to a lawless and wandering way of life, now seek revenge against those who caused their ruin. Neither is the Mussulman population attached to the British government; themselves formerly commanders, see now with regret how this power has fallen into the hands of others, and wish nothing more earnestly than to establish *Timur's* throne in Delhi, and that of *Aureng Zeb* in Agra.

These united causes for fermentation cer-

tainly make the power of Britain in India appear far from being yet perfectly established. *The Hindu race*, which forms the great mass, can, however, be considered as rather attached than disinclined to it, especially the lower castes, whose protector the English government has always been. The fidelity of the army is certain.\* The greatest security for the continuance of the British power in India lies, however, without doubt, in the exceedingly mild and easy character of the Hindus (especially among the inhabitants of Bengal, the very pith of the British power); in the *division into castes*; and on their belief in the transmigration of souls. The castes prevent the desire of the low-born from aiming at higher ranks in society (a common cause of disquiet in Europe); those in the higher classes consider life as so insignificant a part of their eternal being, that it is not worth while to trouble themselves much about it, and are consequently inspired with a *stoical and slavish indifference*, which promotes obedience to the temporal powers, and prevents the breaking out of insurrection.

The question now is, Whether the elements of stability overbalance the materials for fermentation existing in India? I, for my part, consider this very probable, provided the British government continues to treat India in the same wise and mild way as hitherto, and by degrees prepare the way for the natives to obtain, through ability and merit, a greater share in the government of the country than that at present enjoyed; which extends only to the lowest places in the civil and law department, and the lower in the army.

The power of England over India is a power depending on opinion. Should the Hindu cease to entertain the conviction of the intellectual and moral superiority of the English, it would be impossible for the trifling number of the latter now in India, amounting in all to 100,000 (government, officers of the army, soldiers, tradesmen, planters, &c. &c. included), to retain the government of 100,000,000 of natives, more than half of whom belong to warlike nations. It is, therefore, particularly necessary to endeavour to keep up this power of opinion, which can be done only by means of just government in general, and moral individual conduct. That time must, however, come at last, when a separation will take place, to which the increasing prosperity and enlightenment of the Hindu nation will contribute; for when a nation has arrived at maturity, independence forms the principal object of its wishes. It is at such a period that India, like America formerly, will deliver itself from the colonial leading-strings of the mother-country. That such will be the case must be seen by every thinking Englishman, and seen, too, *without regret*; for England can be great, and powerful, and happy without India, as it has been so without America. Britain has been called by Providence to spread the blessings of civilisation throughout the surface of the earth; she has planted the tender flower on the northern continent of *America*, has afterwards taken it to *Asia's* ancient abodes, and is now preparing its advancement on the extensive coast of *Australia*. To determine the period when the separation

\* In the presidency of Bombay, the English officers, disaffected on account of some retrenchment that was made, had openly revolted (1790), and refused to march on an expedition against a Dutch colony. The Hindu soldiers would not join in the revolt of their officers, and maintained the strictest fidelity towards the government: such examples of faithfulness are uncommon in every army.

of India from England will take place, is beyond the limits of man's shortsighted glance into futurity; it may take centuries, and it may possibly occur within decennia,—fate alone can determine this; but the probability is, that it is distant. The Anglo-Indian kingdom is still full of youthful strength, it has not arrived at the zenith of its power, and it is not till then that the point of culmination is reached. What would, without doubt, hasten this period, are *outward political circumstances of a dangerous nature; a war against India*,—which, besides its direct influence, might possibly bring with it an indirect effect, that of putting in motion the materials for fermentation already existing in the bosom of India itself, and mislead the dissatisfied there to raise the banner of revolt. Such circumstances affect too nearly the subject now under consideration. — *What prospect of stability has the British Power in India?* to be passed over by me in silence. As, however, the object of my work is rather of a *scientific* than of a political nature, and as I, in other respects, also wish to avoid the latter, I shall, in considering the question, confine myself to the strategical, topographical, and statistical parts of the question, leaving the political as much as possible untouched.

The sources used by me in the execution of this part of my attempt, consist principally of *manuscripts*. The writers are Generals Sir John Malcolm and Sir John McDonald (who have both been British ministers at the Persian court, and have a perfect knowledge as well of this country as of the rest of Central-Asia), staff and engineer-officers, *Bonamy, Pottenger, Christie, Hanky Smith, Croves Ellis, Settons, Williams, Macartney, Hamilton, and Mansfield*, besides *Alexander Burns's* separate memoirs of *Sind, Marwar, Cutch, the river Indus*, and the central countries of *Asia*.

A glance at the map of India will shew that the boundaries of that country form a kind of irregular square, the south-east and south-west sides of which are bounded by the Indian ocean; the north-east protected by the Himalaya and the Aracanian mountains; and the north-west by the river Indus. The two first-mentioned sides are perfectly free from the possibility of attack so long as England retains the command or superiority at sea; the third side is equally free from attack, partly from the insurmountable chain of mountains forming its boundary, and partly from the weakness of the neighbouring countries, *Tibet* and *Ara*;<sup>\*</sup> there remains, therefore, only the fourth side (the north-western), where *attack can be made*.

It is, therefore, this boundary which we are to examine.

Although the Indus forms the north-west boundary of Hindu, it is not that of the *British possessions*, which do not extend so far, finishing partly behind *Sutledge* (with the kingdom of *Lahore* between it and the river Indus), and partly on the borders of *Sind*, leaving this country between it and the last-mentioned river.†

In case any threatening clouds should collect in the north-west against the British possessions in India, which, on account of the great preparations necessary, and the distance, which is

\* The Birman war (against the king of Ara) certainly cost much money, because they were obliged to send all the necessities of life from Calcutta and Madras to Rangoon; but no danger whatever was caused by it to the British government in India.

† *Maver, Mair,* as also the possessions of *Scindia*, likewise lie between the Indus and the direct territories of the British Company; but as these countries form parts of the British confederation, they are mentioned here as lying within its own boundaries.

very considerable, cannot take place otherwise than slowly, the Anglo-Indian government will probably not neglect to take the necessary precautions; which should especially consist of, either by mildness or force, securing to themselves the attachment of those countries which separate the British possessions from the Indus, making this their natural boundary, to which the British defensive powers must advance if military and political reasons continue to have any influence in the council at Calcutta.\*

The Indus being proved navigable for more than 200 geographical miles (see Burne's description), makes it not only an easily defended boundary, but, what is still more important, renders it easier to keep up, and supply, with ammunition, artillery, and other necessities for war, the army collected beyond its banks.

The Anglo-Indian army consists, as we have seen above, of 180,000 men (besides contingent troops), and can easily be restored to its former strength of 240,000. A third part of this army, united with the troops of Runjet Sing and those of the Amers in Sind, offers a force of 100,000 men at the river Indus, which, supplied with all necessities, would form an almost invincible barrier for India.† The second third part of the army (from 70 to 80,000) might, in such a case, form the *line of reserve*, behind the Sutledge and Loony, within the Company's own territory: and the last third remain in the interior of the country to keep all quiet. It is in this position that the Anglo-Indian army might be ready to meet any attempt made on India; and for the sake of still greater security, extend its outposts to Peshawar and the Soliman mountains. As the British commander can judge, from the direction of the hostile preparations, on which part of the Indus (the upper, middle, or lower) the attack is intended, he will always have an opportunity of so dividing his own forces as always to meet the enemy at the proper point.

Having now shewn the strategical movements of the Anglo-Indian army, we ought to examine what power could undertake a war against India; and in what manner this power should proceed in order, with any chance of success, to venture on such an undertaking.

In the course of the last twelve or fifteen years the central countries of Asia have undergone so great changes, that the opinions expressed before this time, by men well acquainted with the subject, are no longer applicable.

These countries are Persia with Khorassan and Kirman, which are partially subjected to it; Afghanistan, Beluchistan, Koondoo, Khiva, and Bokhara; and the nomadian nations in Turkomania. All that lies to the west of these countries belongs to Turkey, and has less to do with India; while all on the east of them belongs to China;‡ and forms its own political world.

Of these countries Persia merits, without doubt, the first place. But what a change has not this power undergone within a few years! During the latter part of the reign of its last

aged monarch (Feth Ali Shach), Abaz Mirsa, his successor, exercised great influence in Persia's council-chamber, hostile to Russia, and friendly towards England. It was he who began the war in 1826 against Russia, ending so unhappily for Persia, which (according to the peace at Turkomanchai, in 1828,) was obliged to give up the fertile provinces of *Erivan* and *Nahshivan*, and saw the Russian boundary advanced as far as to the river Arras (the Araxes of the ancients), in the neighbourhood of Tabriz, and not far from Teheran, the two principal cities of Persia. Abaz Mirsa died in 1833; and his young son, Mohamed, became his grandfather's successor at his death, in 1834.

Mohamed ascended the Persian throne, protected both by Russia and England, which jointly endeavoured to put aside the claims of his numerous competitors. *Sir Henry Bethune*, a distinguished English officer in the service of the Shach, contributed, however, most to this happy result.

It could not then with certainty be known what political system the young Shach would follow, and each party hoped to be honoured with his confidence and favour; which of them, however, was mistaken was soon shewn, when the Shach, contrary to the English ambassador's serious representations, began his campaign against Herat, the strongest fortification on the great route to India.

Almost the same injurious change for England has taken place in India as the other neighbouring state, Afghanistan. Not more than fifteen years since this country formed a powerful monarchy, under the title of the *Caulbul* kingdom, the rulers of which have always been on good terms with the British government in India; but through civil wars, the history of which is too voluminous to be mentioned here, this kingdom has been divided into several principalities, independent of each other. *Caulbul* devolved (1826) on *Dost Mahomed Khan*, brother of the former king's vizier; *Peshawar* has its own governor (*Sirdar*), who pays tribute to Runjet Sing in Lahore; *Kandahar* is under the management of *Kohmid Khan*, a brother of *Dost Mahomed* in *Caulbul*; Herat alone has remained under the power of the old dynasty, and it is now governed, though weakly, by *Kam-rau*, son of the last king of *Caulbul*. *Ghizney* has obtained its independence, as also have the Amers in Sind, who were before petty princes under the power of the *Caulbul* kingdom. This division of the monarchy of the *Doroneus*\* has deprived India of the shelter of a power that was friendly inclined, which, invincible in its mountains, possessed, however, no offensive force against British India, and was therefore, in a double point of view, important for it.

The other states of Central-Asia are of much less importance to India than the two last mentioned: *Beluchistan* is inhabited by a predatory people, who rob every traveller, make plundering expeditions to the neighbouring lands, and carry on continual wars between their different kheels, or tribes. The *Beluch*, like the Arab and the Turkoman, is always on horseback, and could therefore present a considerable body of cavalry, if their own disagreements did not prevent it. The nominal governor of this extensive country is the khan in *Kelut*, who possesses a kind of feudal government, but is so imperfectly obeyed by his vassals that the khan is almost without power. It is evident that *Beluchistan*, with such a state of society, is incapable of under-

\* This was the name of the royal line reigning in *Caulbul*.

taking any thing against the British possessions in India; as it is besides separated from them, as well by the Soliman mountains and the Indus, as by the extensive dominions of the Amers in Sind.

*Koondoo* has, during the last twelve or fifteen years, considerably increased its power by conquests, which its present king, *Mahomet Moorat Bey*, has made of *Budwhkskan*, *Kholum*, *Balkh*, and other places; so that it includes all the northern branches of Hindoo Koosch, and thence down to the bed of the Oxus. Its military force is not, however, more than 20,000 men, undisciplined cavalry, without infantry, and therefore of but little consequence against India, from which also *Koondoo* is separated by the great natural hinderances.

Next to *Koondoo* we find, to the east of the Oxus, *Bokhara* (the ancient *Trans-oxiana*), with *Samarkand*, a tributary to it, a fertile country, but surrounded with sand deserts, and inhabited by a fanatic, Mahomedan people, who have every Christian power. *Bokhara* is governed by *Uzbek Tartars*; and is the staple town for the trade between western and Chinese Asia. Its army consists of 22,000 cavalry, 4000 infantry, and forty field-pieces badly served, and is so much the less capable of undertaking any thing against India as the disposition of the people is rather peaceable than warlike.

(To be continued.)

## THE DRAMA.

[Second notice.]

5. *Catiline*; or, the Roman Conspiracy, has frequently suggested a subject for the drama, and, from Ben Jonson to Dr. Croy, has employed the pens of able writers, both in England and on the Continent. Mr. Reade informs us that his play was composed some years ago, and without his being aware of the existence of Dr. Croy's work; from which it is, however, so dissimilar, that he has no inducement to suppress it on the ground of resemblance. "Each author had taken his own ground and view from *Salust*; and each had, perhaps, equally benefited by the scholastic production of 'rare Ben Jonson'."

Mr. Reade has now printed his *Catiline* for private circulation; though, if such publication succeed at all, he might have ventured it in the usual way; for it reflects no discredit on his muse, and is not unworthy of the author of "Italy" and "The Deluge." We know not how it is, but *Roman* history rarely interests us. There is a harshness about the Roman women, and a sternness about the Roman men, in which there is so little of humanity, that we feel no sympathy with either. Where suicide was a triumph, it is impossible to entertain the common sentiments of our nature, and indulge in grief or give way to despair at the bereavements of death. The heroic is a sore enemy to the affections: it may be grand, but it is not touching; it may bring down the thunder-shower of ruin, but not the gentle rain of sorrow. Therefore, let us confess the truth: we have not a tear to shed for *Marius* on fallen *Carthage*, for *Cato* about to slay himself, for *Sylla*, for *Gracchus*, for *Catiline*, for *Brutus*, for *Cesar*, nor for any one of their stamp: *Pompey* certainly is a character to reach our feelings; in the fate of *Antony* we cannot help also taking some concern; and, strange though it may seem, *Lucullus* is one of the very few of our interesting Roman. How is this? Simply because there are weaknesses in their composition which make them brethren of mankind, and not demigods. What's *Hercules* to us, or we to *Hercules*, that we should weep for him?—not even when *Nessus's* horrid shirt drives him to madness.

Mr. Reade has invested his theme with as much of poetry as we could have expected from his former productions; and with quite as much of influence over our sensibilities, as we could anticipate from any catastrophe in Rome, among its pitiless senators, bloody conspirators, harsh citizens, and rugged soldiers. He has, for the first time within our knowledge, introduced *Julius Cesar* as a youthful character, and in love with *Fulvia*, the heroine of the drama. Under somewhat similar circumstances, his *Julius* bears a family likeness to *Jaffier*; *Catiline*, *Cethegus*, *Crassus*, *Lentulus*, *Petrus*, and *Cicero*, are all drawn with distinctness and force; and the finale is good, both in effect and language.

"Scene VI.—Another Part of the Field.

*Alarums: Retreat.*

*Enter Cato, Petreus, Cicero, and Soldiers.*  
Cato. Thanks to the gods! the bloody day is ours; Well hast thou fought, brave soldier! and withheld me When I would have retreated from their fury; The senate shall thank thee.

*Petrus.* A bloody purchase; And hardly worth the cost, were not Rome's life; The stake: for more than half our army's slain;

\* I doubt this so much the less, as the present governor general, Lord Auckland, is a man possessing both political penetration and strength of character.

† According to what is said, Lord Moira's army against the Pindaries, in 1817, consisted of not less than 81,000 infantry, 33,000 cavalry, and 300 field-pieces: how much easier ought it not to be, and also, how much more important, in case of a warlike attempt against the Indus, to collect a similar force there now?

‡ Yarkind, the nearest country east of Koondoo, was, not more than twelve years since, conquered by China, whence an army was sent of 80,000 men, most of the soldiers of which were armed with fire-arms, of such a weight that it required two men to carry them. Yarkind is Mahomedan, as also Khokan, situated to the north of Yarkind. This latter is governed by Uzbekian Tartars, and has paid for some years tribute to China.

The rest so wounded they will scarce reach Rome :  
The enemy have fallen to a man :  
None fled : they fell like pillars in their places,  
Covering the spot they stood on with their bodies.  
Cicero. Such desperate and determined valour shews  
How fixed their resolution.

Catiline (without, and at a distance). Petreius !  
Cato. Hark, 'tis the shout of Catiline !  
Catiline (without—near). Petreius !

[Alarums, and shouts within.  
Petreius. Stand back—and let him have the combat.]

[Petreius is left alone in the front of the stage : from the extremity, enter Catiline, mortally wounded : on seeing Petreius, he raises his shield ; and staggering towards him, falls dead at his feet.  
Well hast thou played the soldier's part, and died  
The soldier's death !

Cicero. A brave, bad man ! Behold  
How Nature marks his character in death !  
See how that swarthy brow still frowns defiance ;  
How his red hand still grasps his well-hacked sword ;  
Shewing his will unconquered ! Hadst thou been  
But half as zealous in support, Romans as  
Thou wert to overthrow her, thou hadst left  
None ranked in virtue higher than thyself.  
Petreius. Now let our homeward path to Rome become  
Triumphal march.

Cicero. Not so, brave veteran !  
For what have we to triumph in ? We have not  
Fought with our enemies, but friends. Brethren  
Have been opposed to each, and sons to sires.  
O cursed is that nation when it wars  
Upon itself ! when its own sword is turned  
Upon its vitals ! There's no greater plague  
Can blast a country than a civil war !  
Famine and pestilence have bounds ; but who  
Shall fix the limits of intestine broils ?  
There's scarce a nation when we see Rome who  
Will not demand her son ! Her flower of youth  
Lie dead ; but not a desperate enemy  
But purchased many better lives for one.  
No ! let us show a decent joy, for we  
Have crushed these traitors, and for ever ; but  
Let it be tempered. Oh ! let us respect  
The wounds that Rome will shriek with when she hears !  
Our cup is mixed ; then let us shew the gods  
That we can bear, with firm and equal mind,  
The good and ill with which they prove our virtue."

We must, however, quote a few other specimens of Mr. Reade's poetry. Fulvia exhorts Caesar to forsake the conspiracy, and not give way to spleen and bitterness :—

" Caesar. Ay, thou wouldst have me always equitable !  
Why, the best virtue that becomes a man  
Is his humanity ! his fellow-feeling  
For sympathies familiar with his own.  
Let Cato eat his crust 'n the dark : let me  
Feast with a set of hungry rogues around me,  
And hear their shouts—'they're honest at the time !  
If I have made them happy, I feel  
The wiser, ay, and better man of the two !  
Nay—if I please thee more, I'll ape the stoic ;  
Look wise and solemn, and walk clothed in rags,  
Shaming the modesty of nature ; grudge  
My sharp-edged bones the wretched alms  
That keeps my life together ; and scorn all  
Whose ribs are softer than my own ! a crust—  
A wretch whose boast is never to have smiled :  
A dry anatomy ; still mumbling out  
Beneath a prickly bush of unshorn beard  
Sophisms as bare and meagre as his bones !  
Or I'll be Cicero, and scratch my head  
To rouse my wisdom ; then, in thin, sharp voice,  
Pipe out the deeds of Grecian heroes : borrow  
Their wits, and sell them for my own ; then listen  
To my own hired applause."

A speech of Catiline, as a match :—

" Caesar. But if we fail—  
Catiline. In the best cause that ever called on man  
The failure stamps it worst. If we succeed,  
When will the herd be tired with praising us ?  
What's vice and virtue, but names given to deeds  
That men or love or hate as they affect  
Themselves ; and which change names and characters  
With circumstance and manners ? No, 'tis Power  
Men bow to—ruling and inspiring Power !  
It makes vice, virtue ; all is overlooked,  
All—in the dazzling heights which it hath won !  
Men are not to be loved,—they mock ye ; nor  
Be courted,—they despise ye !—they must fear !  
They're born to be commanded ; and they own  
Instinctively the master-mind ! They may  
Hate, but dare not despise. Power is the giant,  
And fear and flattery are his abject courtiers !  
Let us gain that, and with the mind to plan  
The hand to dare, what can we not attempt ?"

Now for—

" Cato. They never fail who strike for liberty !  
They may be crushed ; but they are not forgotten ;  
They leave their names as watchwords to inspire us  
On through the glorious breach in which they fell !  
And so they triumph ev'n in death."

And—

" Curius. Themorrow's dawn—and we shall bein Rome :  
Masters of fate, and of our enemies ;  
Or sleep too well to know all we have lost."

These are fair examples. The plot, of course, follows the history, and Mr. Reade has by no means improved by causing the discovery of the conspiracy to depend on finding its objects stated, and a list of the conspirators in a scroll lying at the feet of a sleepy or drunken "Hail Porter."

6. *Festus* we should have excepted from a list of dramas for the stage ; and shall therefore reserve it for a separate review. It is an extraordinary production, out-herding Kant in some of its philosophy, and out-Goetheing Goethe in the introduction of the three persons of the Trinity as interlocutors in its wild plot. Most objectionable as it is on this account, it yet contains so many exquisite passages of genuine and glorious poetry, that our admiration of the author's genius overpowers the feeling of mortification at its being misapplied and meddling with such dangerous topics.

#### VARIETIES.

*The Daguerrotype*.—Although the Daguerrotype does not comprehend a single manipulation which every body does not understand, and although it does not presume any knowledge of drawing, still it requires a certain manual dexterity in order to reach the proper point in every part of the operation. We are not surprised, therefore, that at the same time that M. Daguerre is about to publish a detailed account of his discovery, it is also his intention still more completely to initiate, by a kind of practical course, all those who desire to avail themselves of his process.—*La Quotidienne*.

*H. B. Caricatures*.—"The Road to Ruin" (No. 610), a barouche, containing the Queen, Lord Melbourne, Lord Normanby, &c., going at a fearful pace down the hill of Concession and Reform. The leading horses are managed, or rather are unmanageable, by Lord John Russell. The beast he is riding bears the face of O'Connell. The wheelers are under the guidance of Spring Rice, who, in evident fear, is exclaiming, to his brother-postilion, "Hold hard, Johnny !" The reply, "I can't," causes the Queen to ask the premier whether "We are not going down the hill very fast ?" Lord Normanby confesses that "We are going faster than is agreeable," while Lord Melbourne, glancing over his shoulder, perceives, that "We cannot stop until we get to the bottom."—"Practising for the Tournament" (No. 611), was sure to furnish a subject for H.B., and a very humorous group he has made of it. To the left, the House of Lords is overthrowing the House of Commons (both represented by knights, caparisoned and mounted, and tilting over the barrier, "Ireland"). Lord John Russell and O'Connell are the squires, watching the result of the contest. To the right, Lord Brougham is carrying away the ring on the point of his spear ; and, in the background, Spring Rice is knocking the dummy (represented by Lord Durham) off his pedestal. Both caricatures are in H.B.'s best style.

*Laurent de Medici*.—The tragedy of "Laurent de Medici," so long in preparation and interdicted by the police, was at length produced, and with success, at the Théâtre Français, on Saturday night last. The author, M. Bertrand, was proclaimed with the usual éclat.—*Paris News, from the Times*.

*Landlip*.—On the 18th of June, a remarkable displacement of an entire valley, near the foot of a mountain, took place at the village of Federowk in Russia ; and during seventy-two hours it moved with an undulating motion towards the river Volga. The sinking of the valley is one mile and a half long, and 250 fathoms in breadth. Above seventy houses were damaged or thrown down, but happily no lives were lost.

*The Inventor's Advocate, No. I.*—A new weekly contemporary, embracing a very wide field of arts, sciences, and literature. The principal feature is the record of patent inventions,

both domestic and foreign. This will be a useful guide to projectors and inventors ; and any suggestions to improve our patent laws are also very desirable. We have little right to advise in such cases ; but we should think the more space that can be given to these matters, and the less taken up by literary novelties and amusements unconnected with them, would be all the better.

The Minister of the Interior has addressed a circular to the Prefects of Departments, enjoining them to pay the greatest attention to the preservation and classification of all the archives of their respective districts. Where the collections of documents are sufficiently important or extensive, he recommends the appointment of regular archivists to be paid by the state ; he orders all the collections to be catalogued, and kept in properly constructed buildings, subject to due inspection ; and he forbids any paper whatever belonging to such collections to be destroyed or sold without his permission.—*French Paper*.

*Roman Remains*.—Some important and interesting Roman remains have lately been discovered on the banks of the Scheldt.

#### LITERARY NOVELTIES.

##### LIST OF NEW BOOKS.

Lives of Eminent, Literary, and Scientific Men, of France, 2 vols. fcap. 6s. (being Vol. 117 of the Cabinet Cyclopædia).—Reply to Mr. Lockhart's Pamphlet, entitled "The Ballantyne Humbug Handled," 1s. 6d.—Life and Times of Sir T. Gresham, by J. W. Burgon, 2 vols. 8vo. 30s. royal 8vo. 50s.—Presence of Mind and Pride : Tales by Phoebe Blyth, 18mo. 1s. 6d.—Tales of Many Lands, plates, fcap. 7s. 6d.—Observations on Chlorosis, by S. Fox, 8vo. 6s.—System of Practical Surgery, by J. Lizars, Part II., 8vo. 10s. 6d. ; complete in 1 vol. 8vo. 21s.—Jardine's British Salmonide, Part I., folio, 3s. 3d.—Meditations on the Lord's Prayer, by A. Bonnet, translated by W. Hare, fcap. 4s.—Rev. J. Angus's Prize Essay on the Voluntary System, post 8vo. 6s.—Tournaments ; or, the Days of Chivalry, square, 3s. 6d.—The Law relating to the Public Funds, by J. J. Wilkinson, 12mo. 12s.—The Death of an Angel, &c., by J. P. Fichter, translated by A. Kenney, post 8vo. 8s.—The Rose Unique ; or, Errors Explicated, fcap. 4s.—Course of Lectures on Romanism at Liverpool, 12mo. 7s. 6d.—Fitzroy and King's Voyage of the Adventure and Beagle, 2 vols. 8vo., and Appendix, 2s. 18s.—Bingley's Tales about Birds, square, 4s.—Lives and Actions of Highwaymen, &c., by Captain C. Johnson, 3d edition, 8vo. 3s.—The Victories of the British Armies, by W. H. Maxwell, 2 vols. 8vo. 28s.—Colburn's Modern Novelist. Hook's Sayings and Doings, 3d series, 6s.—Morton of Morton's House, an Autobiography, 3 vols. post 8vo. 11s. 6d.—J. P. Cory's Treatise on Accounts, 2d edition, 8vo. 3s. 6d.—Aldine Poets, Vols. XXXIX. to XLII. Spenser, 3 vols. fcap. 25s.—Sermons preached at Halifax, Nova Scotia, by W. Cogswell, 8vo. 12s.—Sermons preached in India, by J. Bateman, 12mo. 5s.—The Poultry Yard, by Peter Boswell, 18mo. 2s. 6d.—The Practical Chemist's Pocket Guide, by W. Hope, 32mo. 1s. 6d.—Guide to Moscow, 18mo. 6s. sewed.—Clarke's Description of Boulogne, 18mo. 6s. sewed.—New Agricultural Tables, by J. Christison, 12mo. 2s.—Cairley's French Revolution, 2d edition, 3 vols. fcap. 25s.—The Regal Armorie of Great Britain, by A. Burnet, 12mo. 10s.

#### METEOROLOGICAL JOURNAL, 1839.

August.	Thermometer.	Barometer.
Thursday .. 22	From 37 to 63	30.10 to 30.13
Friday .. 23	.. 54 .. 63	30.14 .. 30.15
Saturday .. 24	.. 51 .. 71	30.07 .. 29.98
Sunday .. 25	.. 58 .. 72	29.93 .. 29.90
Monday .. 26	.. 49 .. 73	29.97 .. 29.93
Tuesday .. 27	.. 50 .. 64	29.72 .. 29.76
Wednesday 28	.. 45 .. 64	29.95 .. 29.97

Prevailing wind, S.W.

Except the morning of the 23d, and afternoon of the 27th, generally clear ; rain fell in the morning and evening of the 27th.

Rain fallen, .075 of an inch.

Kilmorton.

CHARLES HENRY ADAMS.

#### TO CORRESPONDENTS.

We have this week devoted as much of our space as was convenient to the proceedings of the British Association. It requires some time to sift these multitudinous matters, and separate the new and useful from what is well-known and unimportant. To this we shall apply ourselves in future Numbers, but we must foresee that we shall have to trespass at very great length upon other departments of our Gazette in recording the facts and results, without much of the contradictions and arguments.





WORKS JUST PUBLISHED BY LONGMAN, ORME, AND CO.

BY COLONEL HAWKER.  
**INSTRUCTIONS TO YOUNG SPORTSMEN.** 8th edition, greatly enlarged, with 60 Plates, &c.  
12s. cloth.

"Replete with that species of information which every man who desires to know what he is about in the field will deem essential to success, and without which he must share the fate of all horses."—*Edin. Life in London*.  
"We can conscientiously recommend it to every sportsman, and to every one anxious to become a sportsman, as being immeasurably superior to any we have ever perused in every particular."—*Edin.*

Lately published,  
**Greener on the Gun.** 15s.

BY CAPT. MARRYAT.  
**A DIARY IN AMERICA.**  
3 vols. post 8vo. 8s. 6d.

"These three volumes contain a great deal that will please all readers."—*Times*.  
"The most agreeable book we have yet had on America."—*Examiner*.

THE WORKS OF  
**THE REV. SYDNEY SMITH.**  
3 vols. 8vo. price 30s. cloth, lettered.

MR. JAMES'S LAST NOVEL.  
**THE GENTLEMAN OF THE OLD SCHOOL.**  
3 vols. post 8vo. 3s. 6d.

"We have read these volumes, not only with unflagging, but increasing interest, from the first page to the last."—*Court Journal*.  
"There are always sterling passages, clothing original conceptions of character, interwoven with inexhaustible profusion happily contrived incidents, and interesting shrewd and striking observations, in Mr. James's fictions."—*Monthly Review*.

By the same Author,  
**LIFE OF EDWARD THE BLACK PRINCE.**

2d and cheap edition, 2 vols. 8cap. 15s.  
"An extremely neat second edition, and accordingly in a form well calculated to extend the popularity of a work, the intrinsic merits and interesting subject of which would make it popular in any shape. Mr. James has done every justice to it."—*Literary Gazette*.  
"The most popular, most complete, and most interesting account of the Black Prince that we have seen."—*Athenaeum*.

BY MRS MARY LOUISA BOYLE.  
**THE FORESTER.**  
3 vols. post 8vo. 3s. 6d.

"Miss Boyle has masterfully grappled with her difficult subject, and brought out her historical actors with remarkable truth and touching sympathy. We like her real better than the imaginary characters, and this implies an uncommon achievement."—*Monthly Review*.  
"These are very delightful volumes, and alone entitle the author to take a high rank among the novelists of the day. There are many passages of exquisite tenderness and beauty, which glow with the bright colouring of truth and poetry."—*Edin.*

BY LADY BLESSINGTON.  
**DESULTORY THOUGHTS AND REFLECTIONS.**  
Fcap 8vo. 4s. cloth, lettered.

"We have seldom seen a more alluring volume, either in external beauty or inward wisdom; and we confidently recommend it to our readers, as an instructive exponent of the hidden deformities of society, and a key to its apparent incongruities and follies. As a manual for occasional reading, it will be both beneficial and entertaining, for the terse and well-directed aphorisms it contains are as remarkable for their moral value as for their elegant and graceful setting."—*Conservative Journal*.  
"A beautiful little volume externally, and full of rich morsels, sweetly compressed, of thought and reflection."—*Monthly Review*.

BY DR. SIGMOND.  
**TEA: ITS EFFECTS, MEDICINAL AND MORAL.**  
Fcap 8vo. price 5s. cloth.

"This volume of Dr. Sigmond abounds in matter of instruction relating to the tea-plant, communicated to the reader in a most pleasant style, and will supercede, with the public, the necessity of examining the scarce volumes and large parliamentary folios from which alone so much instruction could be collected."—*Leader*.

"Dr. Sigmond has given all the knowledge that could be gleaned in a popular form, and has contributed a volume of great utility to the class of knowledge which he has before assisted in improving and enlarging."—*Morning Herald*.

BY GEORGE ROBERTS.  
**ETYMOLOGICAL AND EXPLANATORY DICTIONARY OF THE TERMS AND LANGUAGE OF GEOLOGY.**  
Fcap 8vo. 6s. cloth, lettered.

"So full, accurate, plain, and intelligible, in the derivation and interpretation of terms, and so complete in all points necessary to the clear comprehension of the entire subject, that it must remove the difficulties with which this study has been hitherto beset."—*Atlas*.

"The derivations of each word are very distinctly marked; the explanations are clear and sufficiently full."—*Spectator*.

Price 1s. 6d.  
**REPLY to MR. LOCKHART'S PAMPHLET**, entitled, "The Ballantiney Humbug Handled." By the Authors of "A Refutation of the Mistakenness and Calumnies contained in Mr. Lockhart's Life of Sir Walter Scott, Bart. respecting the Messrs. Ballantiney." London: Longman, Orme, and Co. Edinburgh: A. and C. Black.

THE OPIUM TRADE.  
**THE ASIATIC JOURNAL for September** contains—Intelligence from India to July 31, and from China and Australasia to a late date, including the whole of the Proceedings at Canton respecting the Annihilation of the Opium Trade—Entry of the British Army into Candahar—A curious Autobiography of Shah Shooja—An Expedition into the Interior of South Australia, &c. &c. London: Wm. H. Allen and Co. 7 Leadenhall Street.

In demy 8vo., price 1s.  
**SUGGESTIONS to AMATEUR ARCHITECTS.** "Without pretending to give a decided opinion on the subjects of which it treats, we hesitate not to recommend the 'Suggestions to Amateur Architects' to the notice of those for whom it is especially designed. Its style, which is very perspicuous, we conceive the observations to be very judicious, and such as cannot fail to command attention from all those into whose hands the work may fall."—*Liverpool Mercury*. London: Simpkin, Marshall, and Co.; and Egerton Smith and Co. Liverpool.

ARMY AND NAVY.  
The September Number of the **UNITED SERVICE JOURNAL**, and **NAVAL AND MILITARY MAGAZINE**, contains, among other interesting papers—The Naval Gunners Establishment, St. Helena in 1833. By Lieut. Stuart. On the Education and Education of the Prussian Army. By Lieut. Nelson. Notices of the Cape and Southern Africa, since the appointment as Governor of Major-General Sir G. Napier. By Major Charters. Working of the Coast Blockade Service, with Anecdotes of Sailing. Memoirs of E. Castello. Records of an Expedition up the Gootra, with Lander. By Capt. Allen, R.N. Henry Colburn, Publisher, 13 Great Marlborough Street.

ILLUSTRATED WITH TWO ETCHINGS BY BUSS.  
The September Number of **COLBURN'S NEW MONTHLY MAGAZINE** AND HUMORIST, Edited by THEODORE HOOK, Esq., contains—The Planter's Birthday. By the Editor. The Widow Married. By Mrs. Forest Ranger. Troilope, with Two Illustrations by R. W. Ross. Isaac Moss. By Douglas Jerrold, Esq. A Skit among the Letter- Writers. The Clause in the Will. By the Author of "Rattlin the Reefer." Snuff and Snuff-Takers. The Fuggians. Henry Colburn, Publisher, 13 Great Marlborough Street.

8 New Burlington Street, August 30.  
**MR. BENTLEY** has just published the following NEW WORKS—

I. **Ireland: Social, Political, and Religious.** By Gustave de Beaumont. Edited by W. C. Taylor, LL.D. 2 vols. post 8vo.

II. **Mr. Theodore Hook's Jack Brag.** Complete for Six Shillings, forming the New Volume of The Standard Novels and Romances.

III. **Victories of the British Army.** By the Author of "Stories of Waterloo." 2 vols. 8vo. with characteristic Illustrations and Portraits.

IV. **Confessions of a Thug.** By Captain Meadows Taylor, Of the Service of His Highness the Nizam. 3 vols. post 8vo.

V. **The Hon. C. A. Murray's Travels in North America.** Including his Summer Residence with the Pawnee Tribe of Indians. Dedicated, by special permission, to the Queen. 3 vols. 8vo. with Plates.

Also, just ready, **THE CONCLUDING VOLUMES OF THE Memoirs of Charles Mathews, Comedian.** By Mrs. Mathews.

(Vols. III. and IV.), with numerous characteristic Illustrations and Portraits. Richard Bentley, New Burlington Street, Publisher in Ordinary to Her Majesty.

The New Number of  
**THE METROPOLITAN**

for September will contain—  
1. Sketches of Jerusalem. By G. Shakspeare Fanciel, No. VII.  
2. C. G. Addison, Esq. of the Temple. Cleopatra and Macbeth. The Curiousness of Legal Experience. No. IV. By a Solicitor.  
3. The Blind Referee Adrift. By C. Howard, Esq. Author of 8 Melodist for Music. By T. J. Rattlin the Reefer, &c.  
4. The Banquet's Mirth is over. Lord Killickilly. By Abbot Lee.  
5. Mrs. C. Baron Wilson. 10. Secret Treasures. By Mrs. M. de Scotland. 11. The Mark and the Face. 12. My Day-Book.  
Reviews, Notices of New Books, &c. &c. Agents—for Ireland, J. Cumming, Dublin; for Scotland, Bell and Bradfute, Edinburgh; and Smith and Son, Glasgow.

Price 2s. 6d.  
**ON the THEORY OF EQUATIONS.** By W. HOYLE. London: Sherwood, Gilbert, and Piper, Paternoster Row.

In fcap 8vo. price 5s. Illustrated with a Portrait and Vignette, Vol. IV. of  
**THE WORKS OF MRS. VERNES.** Contents. The Forest Sanctuary—Lays of Many Lands—Miscellaneous Pieces—Dartmoor (a Prize Poem)—Welsh Melodies—Hymns for Childhood—De Chastillon, or the Crusaders; a Tragedy—Miscellaneous Pieces. William Blackwood and Sons, Edinburgh.

**THE BRITISH AND FOREIGN REVIEW**, No. XVII. Contents.

1. Wagon on Art in England: Pictures and Picture-Cleaners.  
2. A Rural Police.  
3. The Corn-Laws. Hungary and the Baltic.  
4. Wheaton on the Law of Nations.  
5. Lamartine's Poems. La Chute d'un Ange.  
6. England, Austria, and Turkey.  
7. The State of the Nation.  
8. Church and State. The Russo-Greek Church.  
London: R. and J. E. Taylor, Red Lion Court, Fleet Street. Edinburgh: A. and C. Black. Dublin: J. Cumming.

In large vols. 8vo. price 3l. 5s. in boards.  
**ECCLESIASTICAL BIOGRAPHY; or, Lives of Eminent Men connected with the History of Religion in England; from the Commencement of the Reformation to the Revolution.** Selected and illustrated with Notes, by the Rev. CHRISTOPHER WORDSWORTH, D.D., Master of Trinity College, Cambridge; and Rector of Buxted with Uckfield, Sussex. 3d edition, with a large Introduction, some new Lives, and many additional Notes. Printed uniformly with the "Christian Institutes," by the same Editor. J. G., F., and J. Rivington, St. Paul's Churchyard, and Waterloo Place, Pall Mall.

NEW PEERS.  
**DEBRETTS COMPLETE PEERAGE of the UNITED KINGDOM.** Improved by WILLIAM COWPERTON, Esq. The 22d edition, including the New Peers created at and since the Coronation, with a Portrait of Her Majesty, beautifully engraved by Dean, and the Arms now incorporated with the Text, from Designs by Harrey. In 1 vol. price 25s. in extra cloth. J. G., F., and J. Rivington; and other Proprietors.

8vo. price 5s.  
**A NARRATIVE OF THE DISCOVERIES of SIR CHARLES BELL in the NERVOUS SYSTEM.** By ALEXANDER SILL-W. Assistant-Surgeon to the Middlesex Hospital. Longman, Orme, and Co.

In 8vo. price 7s. 6d. in cloth boards.  
**PRACTICAL INTRODUCTION to LATIN PROSE COMPOSITION.** By THOMAS KERCHER ARNOLD, M.A. Rector of Lyndon, and late Fellow of Trinity College, Cambridge.

J. G., F., and J. Rivington, St. Paul's Churchyard, and Waterloo Place, Pall Mall.  
"This work, like the 'Practical Introduction to Greek Prose Composition,' by the same author, is founded on the principles of imitation and frequent repetition. It is at once a Syntax, a Vocabulary, and an Exercise-Book; and considerable attention has been paid to the subject of Synonyms."

In 12mo. price 3s. in cloth boards.  
**HENRY'S FIRST LATIN BOOK.** "The object of this work (which is founded on the principles of imitation and frequent repetition) is to enable the pupil to do exercises from the first day of his beginning his Accidence."

By THOMAS KERCHER ARNOLD, M.A. Rector of Lyndon, and late Fellow of Trinity College, Cambridge.  
J. G., F., and J. Rivington, St. Paul's Churchyard, and Waterloo Place, Pall Mall; and Simpkin, Marshall, and Co.  
"Four pages have been recently added to the Index, which may be had by previous purchasers."

Printed by HANNAH PAGE MOVES, of Brook Green, Hammer-smith, and GEORGE BARCLAY, of Number 2 Pall Mall Place, Islington, both in the County of Middlesex, Printers, at their Printing Office, Number 38 Castle Street, Leicester Square, in the said County; and published by WILLIAM ARMIGER SCRIPPS, of Number 13 South Molton Street, in the Parish of Saint George, Hanover Square, in the County aforesaid, at the LITERARY GAZETTE OFFICE, Number 7 Wellington Street, Waterloo Bridge, Strand, in the said County, on Saturday, August 31st, 1839.